



HOSHIZAKI EUROPE

# HOSHIZAKI SERVICE MANUAL

## RU1 & CO2 REMOTE CABINETS



**As the user, please use the operating instructions.  
This service manual does not include operating instructions.  
It is only intended for the service technician.  
here.**



## Contents

Application .....	3
Safety information .....	4
Intended Use.....	4
Suitable Installation Site.....	5
Setting up Several Cabinets Side by Side .....	6
Location .....	7
Electrical Connection.....	8
Instruction for Daily Use .....	9
Control Elements .....	10
• Operating the Product (Evco Controller RU1).....	10
• Operating the Product (Danfoss Controller AK - CC55).....	19
• Operating the Product (Carel MPXpro controller).....	22
• Operating the Product (No Controller) .....	28
Troubleshooting .....	28
Defrost Water.....	29
Door Closing Mechanism .....	29
Power Failure.....	29
Cleaning.....	29
Door Gaskets .....	30
Long Term Storage .....	30
Service.....	30
Switching the Door Hinge Side.....	31
Removing and Reattaching the Evaporator Cover.....	34
Technical Support and Ordering Spare Parts.....	36
Technical Data.....	37
Dimensions .....	39
Disposal .....	46
Electrical Wiring Diagrams.....	47
Cooling Diagrams .....	53
Installation.....	56
Parameter List.....	64



Thank you for choosing a quality product from Hoshizaki.

This manual will advise you on how to install, use, and maintain your new product.

Before our products leave the factory, they undergo a full function and quality test. Should you nevertheless experience problems with the product, then contact your local dealer.

Hoshizaki subsidiaries and dealers placed all over the world are ready to help you.

Products produced by Hoshizaki are covered by different warranty terms related to the country in which the product is sold.

This warranty is subject to correct use according to specifications, where e.g. common maintenance and eventual repairs are carried out by technicians appointed by the dealer and with a general knowledge of the product.

Changes in installation and other uses of the product than specified in this manual might affect the operation and durability of the product.

The manual is written according to our current technical knowledge. We constantly work on updating this information, and we reserve the right to make technical changes.

### **Application**

The product is intended for the storage of foodstuffs in non-household environments.

The product is designed for storage at a constant temperature and cannot be used for chilling down or freezing hot/fresh foodstuff.

The product is only to be used for the purpose for which it has been expressly designed. Any other use could cause the foodstuff stored in the product is not kept at the correct temperature or even damage the product.

The product is not suited for storing blood plasma, laboratory samples, pharmaceuticals, or similar substances.

The manufacturer will not be held liable or responsible for any damage caused by improper, incorrect, or unreasonable use of the product.



## Safety Information

This service manual does not include comprehensive operating instructions for the user; it is only a further supplement to the operating instructions.

It intends for a trained service technician. As a result, many important safety instructions for the user are missing about the scope and readability. In case of doubt, please observe the information in the operating instructions for transport, installation, operation, and electrical safety and never pass on this service manual in place of the operating instructions.

### ***Important***

Description of symbols used in this manual.



**Warning** Lacking observation to these instructions might result in accidents with personal injury.



**Important** If these instructions are not observed, the product might be damaged or destroyed.

Be aware that Hoshizaki has taken precautions to ensure that the safety of the product is in order.

## Intended Use

This cabinet is intended for the storage of packaged foods at a constant temperature.

Area of application:

Climate Class	Ambient Temperatures and Humidity
4	+30°C with %55 RH
5	+40°C with %40 RH



## Suitable Installation Site

The cabinet must be installed in a dry, well-ventilated room away from direct sunlight at a sufficient distance from radiators and other sources of heat. Please always consider the waste heat of all cabinets installed in one room!

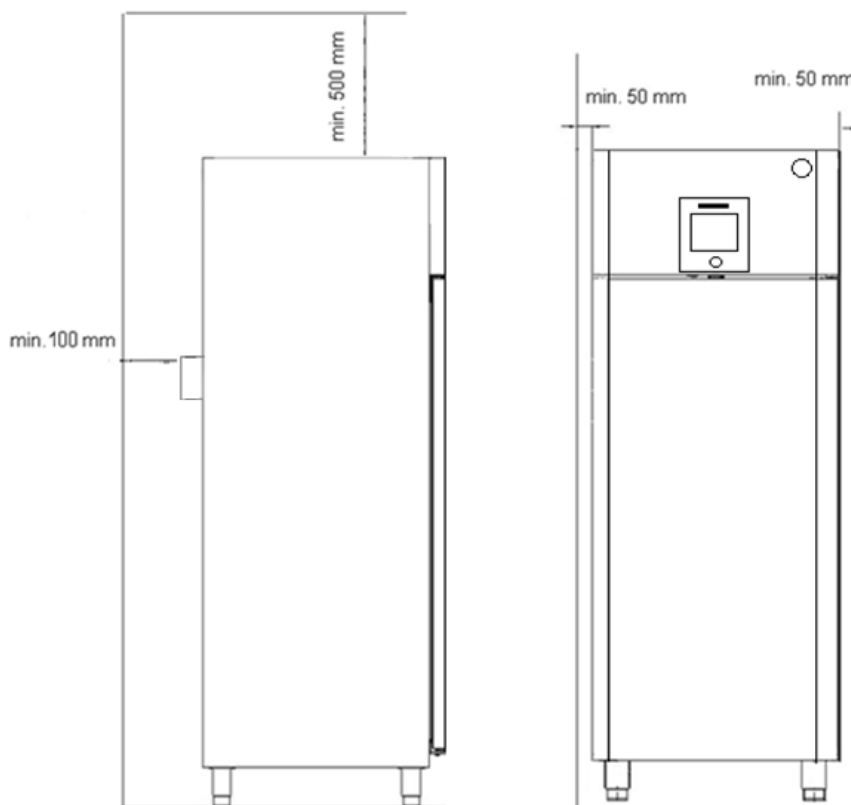
The ambient temperature must lie between a minimum of **+16 °C** and a maximum of **+40 °C**. A gap of at least 50 cm must be kept between the top edge of the machine compartment and the ceiling. The air exchange in this area must not be obstructed from the front or the side by screens etc. hanging from the ceiling.

For electrical safety reasons, the cabinet must not be operated outside. The refrigeration technology of the cabinet does not function outside or in unheated rooms (particularly in colder seasons) and can be damaged by low temperatures.

The refrigeration unit will be installed separately outside the cabinet. Accordingly, the cabinet's position must be set up at a certain distance from the refrigeration unit, as per the instructions shown in section Installation (Page 56).

Distance from walls and ceiling:

There must always be 500 mm of free space above the product, to allow for service. The product should be placed as close as possible up against the wall.





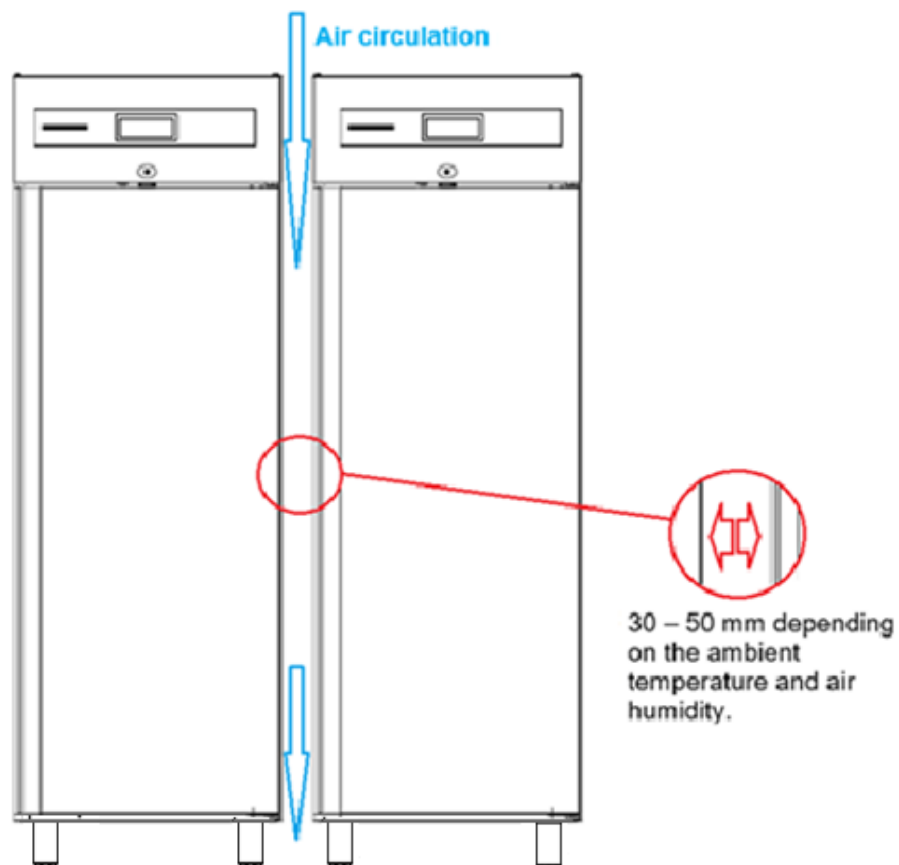
## Setting up Several Cabinets Side by Side

Depending on the temperature and air humidity at the installation site as well as the selected set point setting, the moisture in the ambient air can condense on the surface of a refrigerating unit due to its design.

If several cooling or refrigeration units are set up side by side, this condensation effect becomes stronger, and a lower air quantity can circulate between the cabinets. As a result, a minimum distance of **30 to 50 mm** must be kept between the cabinets depending on the temperature and air humidity.

These gaps must not be sealed either at the top or bottom, but can be covered by a stainless-steel panel from the front for aesthetic purposes. The panel must be removable for cleaning within the gaps.

If it is not possible for air to circulate freely at the bottom, e.g. due to a base installation, then the gaps cannot be sealed at the front.





## Location

When receiving the product, check the packaging material for damage.

If any damage occurs to the packaging material, it should be considered if the product might have been damaged too. If the damage is substantial, please contact your dealer.



This task requires at least 2 persons. The heaviest part of the product is at the top. Be aware of this, when removing the transport pallet.



Because of the heavy weight of the product, the floor might be damaged or scratched when moving the product.



Correct set up gives the most effective operation.



The product should be located in a dry and adequately ventilated room.



Avoid placement of the product in a chlorine/acid-containing environment (swimming bath etc.) due to risk of corrosion.



The product and parts of the interior is equipped with a protecting film, which should be removed before use.



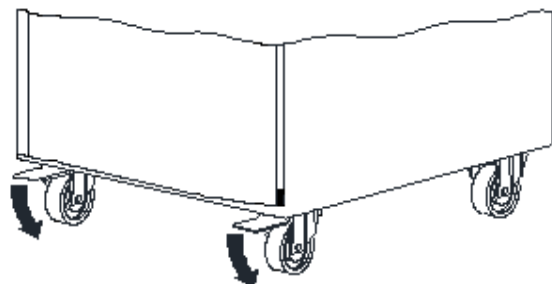
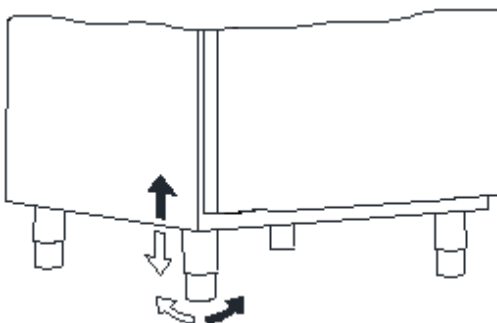
Clean the product with a mild soap solution before use.



The set-up place must be level and horizontal.

For versions with legs, use the adjustable legs to make sure that the product stands level and upright.

For versions with castors, the locking devices of the two front castors must be activated, when the product is in place.





## Electrical Connection

Read the text below thoroughly before electrical connection.



The product is intended for connection to alternating current. The connection voltage (V) and frequency (Hz) are shown on the nameplate in the cabinet



**Never use an extension cord for this appliance!**

If a wall socket is placed at a longer distance than the length of the supplied power cord, contact an electrician to establish a wall socket within the range of the power cord.



If the product is faulty, **it should be examined by a qualified service technician** who is familiar with the installed control unit and has experience maintaining the CO2 cabinet.



In general, it must be examined by the company that has connected the product.



Always disconnect the power if interruptions in the power supply occur, when electrical parts are removed/put on, and before cleaning and maintenance of the product.



Do not use the product without all protective parts installed to avoid touching live or rotating machine parts



The product is not to be used outdoors.



All earthing requirements prescribed by local electrical authorities must be complied with. The plug and wall socket must then ensure proper grounding. Consult an electrician if necessary.



Make sure the product is switched off at the socket or that the kettle plug is disconnected, before service is performed on electrical parts. It is not sufficient to switch off the product at the controller.



## Instruction for Daily Use

Do not damage the electrical parts or refrigeration system parts (evap, evap box, heater etc.).



If the product is fitted with a re-evaporation tray underneath the cabinet it is important not to service/clean the tray or the heater, before the cabinet has been turned off long enough to make sure that the re-evaporation heater has cooled off, in order to prevent the risk of burns.



To ensure correct and efficient air flow in the cabinet, the shaded areas must be kept free of items.



All items to be stored, that are not wrapped or packed, must be covered in order to avoid unnecessary corrosion of the inner parts of the cabinet.



If any controller parameters are changed from default, this could cause that the product is not functioning normally, and harmful temperatures could damage items that are kept inside the product.



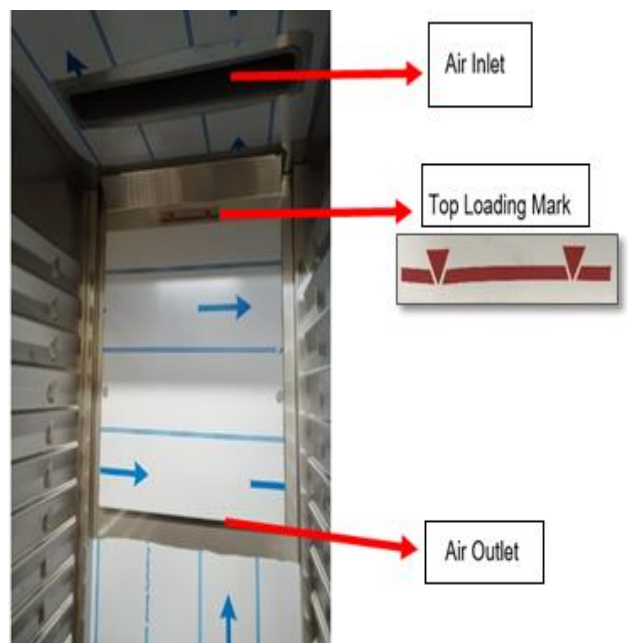
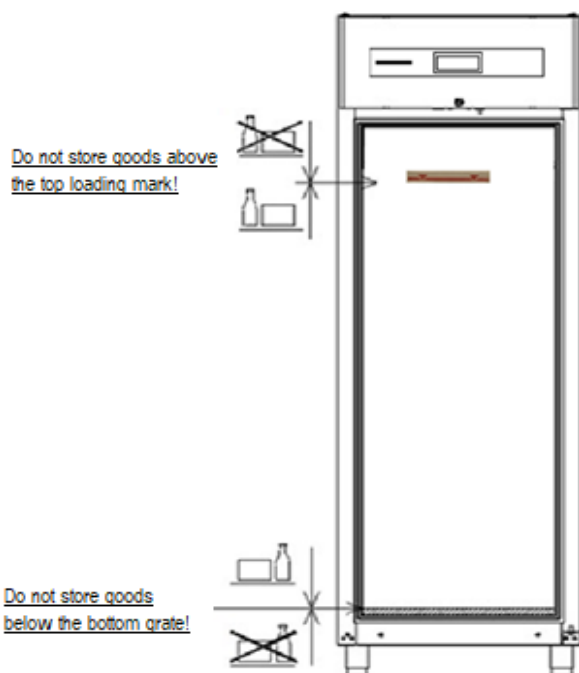
Maximum loading of shelf: 40 kg



Do not store explosive substances such as aerosol cans with flammable propellant in this appliance.

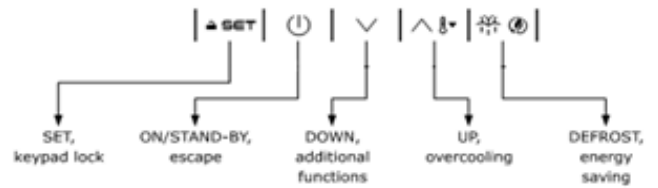


Do not place any products below the bottom shelf support or above the top load line marking.





## Control Elements



### Switching the device on and off

If POF = 1 (default), touch the on/stand-by key for 2s

If the device is switched on, the display will show “P5” value (“cabinet temperature” default); if the display shows an alarm code, see the section **ALARMS**.

LED	ON	OFF	FLASHING
	Compressor on	Compressor off	- compressor protection active - setpoint being set
	Evaporator fan on	Evaporator fan off	- evaporator fan stop active
	Cabinet light on	Cabinet light off	- cabinet light on by digital input
<b>AUX 1</b>	Auxiliary function 1 on	Auxiliary function 1 off	- auxiliary function 1 on by digital input - auxiliary function 1 delay active
<b>AUX 2</b>	Auxiliary function 2 on	Auxiliary function 2 off	- auxiliary function 2 on by digital input - auxiliary function 2 delay active
	Defrost or pre-dip active	-	- defrost delay active - dripping active
	Energy saving active Low consumption active	-	-
	View time	-	- set date, time and day of the current week
	View temperature	-	- overcooling or overheating active
<b>HACCP</b>	Saved HACCP alarm	-	- new HACCP alarm saved
	Alarm active	-	-



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If Loc = 1 (default) and 30 sec. have elapsed without the keys being pressed, the display will show the “Loc” label and the keypad will lock automatically.

## Unlock keypad

Touch a key for 1 sec: the display will show the label “UnL”.

## Set the set point (if r3= 0, default)

Check that the keypad isn’t locked.

1		Touch the SET key
2		Touch the UP or DOWN key within 15 sec. to set the value within the limits r1 and r2 (default “-40..... 50”)
3		Touch the SET key (or do not operate for 15 sec).

## Active manual defrost (if r5= 0, default)

Check that the keypad isn’t locked and that overcooling is not active.

1		Touch the DEFROST key for 2 sec.
---	--	----------------------------------

If P3 = 1 (default), defrost is activated provided that the evaporator temperature is lower than the d2 threshold.

## Cabinet light on/off (if u1c...u5c = 5)

1		Touch the CABINET LIGHT key.
---	--	------------------------------

## Button operated load on/off (if u1c...u5c = 10 or 11)

2		Touch the CABINET LIGHT key. (for 2 sec if u1c...u5c = 5)
---	--	---

If u1c...u5c = 6, the demisting switch on for the u6 duration

## Silence buzzer (if u9 = 1, default)

Touch a key.

If u1c...u5c = 11 and u4 = 1, the alarm output is deactivated.

## ADDITIONAL FUNCTIONS

### Activate/deactivate overcooling and overheating

Check that the keypad is not locked.

1		Touch the UP key for 2 sec
---	--	----------------------------

FUNCTION	CONDITION	CONSEQUENCE
overcooling	r5 = 0 and defrost not active	The setpoint becomes “setpoint – r6” for the r7 duration
overheating	r5 = 1	The setpoint becomes “setpoint + r6” for the r7 duration



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Activate/deactivate energy saving in manual mode (if r5= 0)

Check that the keypad is not locked.

1		Touch the DEFROST key.
---	--	------------------------

The setpoint becomes “setpoint + r4” at maximum for HE2 duration.

Activate the high or low humidity functions (if F0 = 5)

Check that the keypad is not locked.

1		Touch the DOWN key for 1 sec.
2		Touch the UP or DOWN key within 15 sec. select the label “rH”.
3		Touch the SET key for 2 sec. until the display shows the right label for the function (only touch the key to see the function activated).
	<b>LAB</b>	<b>DESCRIPTION</b>
	rhL	Low humidity function (evaporator fan with F17 and F18 if the compressor is off, on if the compressor is on).
	rhH	High humidity function (evaporator fan on).
4		Touch the ON/STAND-BY key to exit the procedure (or don't operate for 60 sec.).



View/delete HACCP alarm information (not available in EVJ203, EVJ204, EVJ205, EVJ224 and EVJ225).

Check that the keypad isn't locked.

1		Touch the DOWN key for 1 sec.
2		Touch the UP or DOWN key within 15 sec. select a label.
	<b>LAB</b>	<b>DESCRIPTION</b>
	LS	View HACCP alarm information.
	rLS	Delete HACCP alarm information.
3		Touch the SET key.
4		Touch the UP or DOWN key to select an alarm code (to select label “LS”.) or to set “149” (to select label “rLS”).
	<b>Code</b>	<b>Description</b>
	AL	Low temperature alarm
	AH	High temperature alarm
	id	Open door alarm (if i4 = 1)
	PF	Power failure alarm (available in EVJ213, EVJ214, EVJ214N7VXXRXV, EVJ215, EVJ234, EVJ235 or in EVJ203, EVJ204, EVJ205, EVJ224 and EVJ225 with



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		interface EVIF25TBX connected)
5	 SET	Touch the SET key.
6		Touch the ON/STAND-BY key to exit the procedure (or do not operate for 60 sec.).



**NOTE: HACCP INFORMATION FOR IN EVJ203, EVJ204, EVJ205, EVJ224 AND EVJ225**

HACCP text is display that following situations have been occurred:

- **AL (Low Temperature Alarm):** The read-out provided by the controls for the alarm shows the lowest temperature that has occurred in the cabinet and how long the cabinet temperature has been under the set alarm value (A1).
- **AH (High Temperature Alarm):** The read-out provided by the controls for the alarm shows the highest temperature that has occurred in the cabinet and how long the cabinet temperature has been above the set alarm value (A4).
- **id (Door alarm):** The read-out provided by the controls for the alarm shows the highest temperature that has occurred in the cabinet during this type of alarm and how long the door has been open.

Before starting, check that the keypad isn't locked then execute the following commands.

- 1) Press the "SET" button for 5 sec.
- 2) "PA" (which mean password for short) text will appear on the screen. Then touch the "SET" button again.
- 3) Set the value to "-19" with UP and DOWN arrow buttons and touch the "SET" button.
- 4) Parameter code screen will appear, you should choose "Hr0" parameter and "BLE" parameter with arrow buttons and set these values to "0" (zero). Then wait for a while for the screen to return to the main menu.
- 5) After setting these parameters, the **HACCP** text will disappear.









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Example of alarm information (e.g. a high temperature alarm)

8.0	critical value was 8.0 °C / °F (calculated cabinet/product temperature)
Sta	available in EVJ213, EVJ214, EVJ214N7VXXRXV, EVJ215, EVJ234, EVJ235 or in EVJ203, EVJ204, EVJ205, EVJ224 and EVJ225 with interface EVIF25TBX connected
y15	alarm signalled in 2015
n03	alarm signalled in March
d26	alarm signalled on 26 March 2015
h16	alarm signalled at 16.00
n30	alarm signalled at 16.30
dur	
h01	alarm lasted 1 h
n15	alarm lasted 1 h 15 min

View/delete compressor functioning hours.

Check that the keypad is not locked.

1		Touch the DOWN key for 1 sec.
2		Touch the UP or DOWN key within 15 sec. to select a label.
	<b>LAB</b>	<b>DESCRIPTION</b>
	CH1	View compressor functioning hundreds of hours
	CH2	View second compressor functioning hundreds of hours (if u1c...u5c = 1)
	rCH	Delete compressor and second compressor functioning hours
3		Touch the SET key.
4		Touch the UP and DOWN to set "149" (to select "rCH").
5		Touch the SET key.
6		Touch the ON/STAND-BY key to exit the procedure (or don't operate for 60 sec.).



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View the temperature detected by the probes.

Check that the keypad is not locked.

1		Touch the DOWN key for 1 sec.
2		Touch the UP or DOWN key within 15 sec. to select a label.
	<b>LAB</b>	<b>DESCRIPTION</b>
	Pb1	Cabinet temperature (if P4 = 0, 1 or 2)
		Inlet air temperature (if P4 = 3)
	Pb2	Evaporator temperature (if P3 = 1 or 2)
	Pb3	Auxiliary temperature (if P4 = 1,2 or 3)
Pb4	Calculated product temperature (CPT; if P4 =3)	
3		Touch the SET key.
4		Touch the ON/STAND-BY key to exit the procedure (or don't operate for 60 sec.).

## SETTINGS

Setting configuration parameters.

1		Touch the SET key for 4 sec. the display will show the label "PA"
2		Touch the SET key
3		Touch the UP or DOWN key within 15 sec. to set the PAS value (default "-19")
4		Touch the SET key (or don't operate for 15 sec) the display will show label "SP"
5		Touch the UP or DOWN key to select a parameter.
6		Touch the SET key.
7		Touch the UP or DOWN key within 15 sec. to set the value.
8		Touch the SET key (or don't operate for 15 sec).
9		Touch the SET key for 4 sec. to exit the procedure (or don't operate for 60 sec).



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Set the date, time and day of the week (available in EVJ213, EVJ214, EVJ214N7VXXRXV, EVJ215, EVJ234, EVJ235 or in EVJ203, EVJ204, EVJ205, EVJ224 and EVJ225 with interface EVIF25TBX or EVIF25TWX connected)


	<p>N.B.</p> <ul style="list-style-type: none"> <li>- If the device is connected to the interface EVIF25TBX, do not disconnect the device from the mains within two minutes since the setting of the time and day of the week.</li> <li>- If the device communicates with the APP EV connect, the date, time and day of the week will automatically be set by the smartphone or tablet.</li> </ul>
--	---









### Check that the keypad isn't locked

1		Touch the DOWN key for 1 sec.
2		Touch the UP or DOWN key within 15 sec. to select a label "rtc".
3		Touch the SET key. The display will show the label "y" followed by the last two figures of the year.
4		Touch the UP or DOWN key within 15 sec. to set the year.
5	Repeat actions 3 and 4 to set the next labels.	
	<b>LAB.</b>	<b>MEANING OF THE NUMBERS FOLLOWING THE LABEL</b>
	n	Month (01....12)
	d	Day (01....31)
	h	Time (00....23)
	n	Minutes (00....59)
6		Touch the SET key. The display will show the label for the day of the week.
7		Touch the UP and DOWN key within 15 sec. to set the day of the week.
	<b>LAB.</b>	<b>MEANING OF THE NUMBERS FOLLOWING THE LABEL</b>
	Mon	Monday
	TuE	Tuesday
	Ued	Wednesday
	thu	Thursday
	Fri	Friday
	Sat	Saturday
	Sun	Sunday
8		Touch the SET key. The device will exit the procedure.
9		Touch the ON/STAND-BY key to exit the procedure beforehand.



## Reset the factory settings

	<p>N.B. Check that the factory settings are appropriate; see the section <i>CONFIGURATION PARAMETRES</i>.</p>
---	---

1		Touch the SET key for 4 sec. The display will show the label "PA".
2		Touch the SET key.
3		Touch the UP or DOWN key within 15 sec. to set "149".
4		Touch the SET key (or don't operate for 15 sec). The display will show label "dEF"
5		Touch the SET key.
6		Touch the UP or DOWN key within 15 sec. to set "1".
7		Touch the SET key. (or don't operate for 15 sec.)
8	Interrupt the power supply to the device.	
9		Touch the SET key for 2 sec. before action 6 to exit procedure beforehand.



## ALARMS

CODE	DESCRIPTION	RESET	TO CORRECT
<b>Pr1</b>	Cabinet Probe Alarm	automatic	<ul style="list-style-type: none"> <li>- check P0</li> <li>- check probe integrity</li> <li>- check electrical connection</li> </ul>
<b>Pr2</b>	Evaporator Probe Alarm	automatic	
<b>Pr3</b>	Auxiliary Probe Alarm	automatic	
<b>rtc</b>	Clock Alarm	manual	Set date, time and day of the week.
<b>AL</b>	Low Temperature Alarm	automatic	Check A0 , A1 and A2
<b>AH</b>	High Temperature Alarm	automatic	Check A4 and A5
<b>id</b>	Open Door Alarm	automatic	Check i0 and i1
<b>PF</b>	Power Failure Alarm	manual	<ul style="list-style-type: none"> <li>- touch a key</li> <li>- check electrical connection</li> </ul>
<b>COH</b>	High Condensation Warning	automatic	Check C6
<b>CSD</b>	High Condensation Alarm	manual	<ul style="list-style-type: none"> <li>- switch the device off and on</li> <li>- check C7</li> </ul>
<b>iA</b>	Multi Purpose input Alarm	automatic	Check the i5 and i6
<b>iSd</b>	High Pressure Alarm	manual	<ul style="list-style-type: none"> <li>- switch the device off and on</li> <li>- check i5, i6, i8, i9</li> </ul>
<b>LP</b>	Low Pressure Alarm	automatic	Check i5 and i6
<b>C1t</b>	Compressor Thermal Switch Alarm	automatic	Check i5 and i6
<b>C2t</b>	Second Compressor Thermal Switch Alarm	automatic	Check i5 and i6
<b>dFd</b>	Defrost Alarm	manual	<ul style="list-style-type: none"> <li>- touch a key</li> <li>- check d2, d3 and d11</li> </ul>
<b>FUL</b>	SD Card Full Alarm	manual	Free up space on the SD card or replace it
<b>Sd</b>	No SD Card inserted Alarm	manual	Insert the SD card or replace it



## Operating the Product (Danfoss Controller AK - CC55)

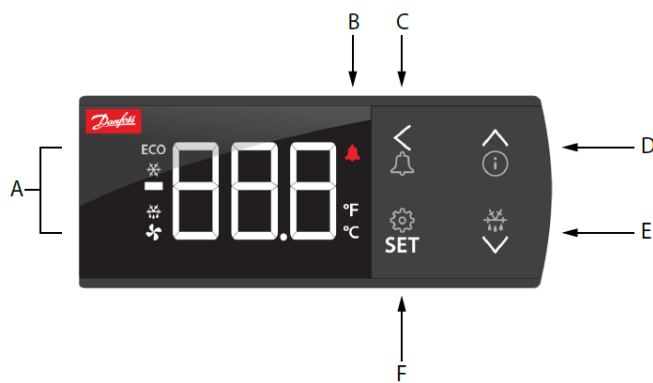
### Starting up:





Plug in the appliance.

Make sure that the 2 - pole main switch is turned on.

The electrical part is placed behind the top panel and can be accessed by opening the top panel.

Display explanation (AK-UI55):



Display Parts	Description
A	Lights up in event of:  - Energy Optimization (ECO)  - Cooling  - Defrosting  - Fan Operation
B	Lights in event of alarm
C	Long press (3 seconds) on alarm button alarm (relay is reset) alarm code displayed
D	Long press (3 seconds) gives access to the information menu "InF" Up arrow / Down arrow / Arrow to left: Navigation in the menu and setting of values.
E	Long press (3 seconds) will start a defrost, "-d-" is shown in the display. Ongoing defrosting can be stopped by a long press.
F	SET: Long press (3 seconds) gives access to the "SET" menu. If the operation is locked with a password "PS" is shown. Enter the code. * Shows the setting for a chosen parameter / saves a changed setting. Short press gives access to entering of the thermostat's cut-out limit.

\* The factory setting of P89 is '0', this step will be skipped without any input values.



- The values will be shown with three digits, and with a setting you can determine whether the temperature is to be shown in °C or in °F.
- To prevent any passing-by user from making unauthorized changes, the access to the display menu is restricted by access codes.

## Factory Settings

If you need to return to the factory set values, do the following:

- Cut off the supply voltage to the controller
- Keep up "Λ" and down "v" arrow buttons depressed at the same time as you reconnect the supply voltage
- When "FAC" is shown in the display, select "yes"



The OEM factory setting will either be the Danfoss factory settings or a user defined factory setting if one has been made. The user can save his setting as OEM factory setting via parameter o67.

Code	Function	Description	Values
o67	Reset to the Factory Settings	With this command you save the controller's actual settings as a new basic setting. (the earlier factory settings are overwritten).	0 = OFF 1 = ON

### a - "SET" Button Parameter List

SET	←	SET button, 3 s: Configuration settings	
Set			
(PS) v	←	PS: Password (if any)	
cFg	SET →		r12 Main switch
v			o61 Application
r--			o03 MODBUS address
A--			r89 Food type
c--			r00 Cut-out temperature
d--			r15 Ther. sensor S4 %
n--			r61 Ther. sensor S4% night
F--			A36 Alarm sensor S4%
t--			o17 Display air S4%
h--			o30 Refrigerant type
o--			o20 Min. transmitter range
p--			o21 Max. transmitter range
q--			d01 Defrost method
u--			d03 Defrost interval
<			d10 Defrost sensor
(Return)			d04 Max. defrost time
			d02 Defrost stop temperature
			<
			(Return)

Menu groups  
See also the following pages.

### b - "Info" Button Parameter List

Λ	←	Info button, 3 s: Information for service use	
Inf			
StA	SET	See control state message	
App	SET	See selected application	
in	SET →		AI1 (PE)
out	SET →		AI2 **
buS	SET	MODBUS quality	AI3 **
SoF	SET	See SW version	AI4 **
<			AI5 **
(Return)			di1 **
			di2 **
			<
			(Return)

Read output status

Read input status

**Output status**  
When you want info on a relay output, the dot will show whether the relay is activated (energized) for e.g.:  
do4 = not activated  
do.4 = activated



## Fault Message (Alarms)

In an error situation the alarm LED on the front will be on and the alarm relay will be activated (depending on priority). If you push the alarm button for 3 seconds you can see the alarm report in the display.

Code	Alarm text	Description
E01	Hardware failure	The controller has a hardware failure
E06	Clock lost time	Clock has lost valid time
E20	Pe Evap. pressure A - Sensor error	Sensor signal is out of range. Please check the sensor for correct operation
E24	S2 Gas outlet A - Sensor error	Sensor signal is out of range. Please check the sensor for correct operation
E25	S3 Air ON evap. A - Sensor error	Sensor signal is out of range. Please check the sensor for correct operation
E26	S4 Air OFF evap. A - Sensor error	Sensor signal is out of range. Please check the sensor for correct operation
E27	S5 Evaporator A - Sensor error	Sensor signal is out of range. Please check the sensor for correct operation
A01	High temperature alarm A	The alarm temperature has been above the max alarm limit for a longer time period than the set alarm delay.
A02	Low temperature alarm A	The alarm temperature has been below the min alarm limit for a longer time period than the set alarm delay.
A04	Door open alarm	The door has been open for a too long time
A05	Max defrost hold time exceeded	The controller has been waiting longer time than permitted after a co-ordinated defrost.
A11	Refrigerant not selected	The refrigerant has not been selected hence control can not be initiated
A15	DI alarm 1	Alarm signal from digital input signal
A16	DI alarm 2	Alarm signal from digital input signal
A45	Main switch set OFF	The controller main switch has been set to either Stop or Manual control. Alternatively a digital input set up for "main switch" function, has stopped control
A59	Case in cleaning mode	A case cleaning operation has been started on a case
AA2	CO <sub>2</sub> leak detected	CO <sub>2</sub> is leaking from the refrigeration system
AA3	Refrigerant leak detected	Refrigerant is leaking from the refrigeration system
a04	Wrong IO configuration	Inputs and outputs have not been configured correctly



For more information, please see the manual for the selected CO2 controller.  
(Danfoss AK-CC55 Compact)

## Operating the Product (Carel MPXpro controller)

### Starting up

Plug in the appliance

Default setting of the cabinet controller is that it is delivered turned on. This means that the controller will start regulating, when power supply is connected, and the main switch is in the on position.

Turning the cabinet on/off

To turn the cabinet on/off the 2-pole main switch, on the left side of the main control box, placed in “the compressor compartment” is used.

### The display

The electrical parts are placed behind the top panel and can be accessed by opening the top panel.





Display layout/explanation:



The above shown display has a three-digit read-out.

Within the read-out area, several LEDs are placed. These LEDs give the following indications.

In general = When a LED is flashing the activation is delayed or limited.

-  = Cooling on (when this LED is lit, cooling is on)
-  = Inside fan running (when this LED is lit, the internal/evaporator fan is on)
-  = Defrost on (when this LED is lit, a defrost cycle is ongoing)
-  = If the LED is flashing, this is an indication for the door being open or an ongoing alarm or error.

**HACCP** = When this LED is lit, a HACCP alarm is ongoing. When this LED is flashing there is a saved HACCP alarm.








## Buttons:

The 4 buttons placed on the right side of the display, are used to access and adjust different parameters. These buttons can be pressed alone or in combination in order to operate the controller.




The below explained settings are the only once which should be changed by the end user. The end user should not modify any parameters which are not explained here. All other settings should be done by a skilled technician.

## USER SETTINGS


### Adjusting the cabinet temperature set-point

- Press and hold Set  during normal operation until the display starts flashing, the cabinet temperature set-point can be adjusted using up  and down . 
- When the set point has been adjusted to the desired temperature, Set  is pressed briefly, in order to save the new value and to return to normal operation.

### How to perform a manual defrost

























- Press and hold def  for more than 5 sec. during normal operation, in order to perform a manual defrost, if the evaporator probe temperature is cold enough.
- When the defrost symbol  is lit, it does indicate that a defrost is ongoing.
- if def  is pressed and held for more than 5 seconds when a defrost cycle is ongoing, the defrost will be deactivated.

### How to mute acoustic alarms

- When the controller is in alarm mode, you will hear an acoustic signal. The alarm can be muted by pushing Prg/mute .



## Setting the temperature alarm limits









- Press and hold Prg/mute  for more than 5 sec. during normal operation, in order to open the parameter list. The display will show **/c1**
- Press Prg/mute . The first category of parameters, “Pro”, is shown
- Press UP  until reaching category “ALn”, indicated by the  icon being lit on the display.
- Press Set  parameter AA will be displayed.
- Press UP  until reaching A1
- Press Set  in order to adjust if AL (**A**larm **L**ow temperature threshold) and AH (**A**larm **H**igh temperature threshold) settings shall be (0 = relative to the cabinet temperature setpoints) or (1 = absolute) default setting = 1
- Press Set  in order to store the chosen setting and return to A1
- Press UP  until reaching AL (**A**larm **L**ow temperature threshold)
- Press Set  to make it possible to adjust AL using up  and down  (adjustable between -50 and +50) Default setting = -50°C
- press Set  in order to store the chosen setting and return to AL
- press UP  until reaching AH (**A**larm **H**igh temperature threshold)
- press Set  to make it possible to adjust AH using up  and down  (adjustable between -50 and +50) Default setting = +50°C
- press Set  in order to store the chosen setting and return to AH
- press UP  until reaching Ad (**A**larm **D**elay time for AL and AH)
- press Set  to make it possible to adjust Ad using up  and down  (adjustable between 0 and 240 minutes) Default setting = 120 minutes.
- press Set  in order to store the chosen setting and return to Ad
- Push and hold Prg/mute  for more than 5 sec. in order to save changes, and the revert to the main menu.

In order to create temperature alarm thresholds and alarm delay time suitable for a refrigerator or a freezer the below alarm setting examples can be suggested:

	Setpoint	A1	AL	AH	Ad
Refrigerator	+5 °C	1	+1 °C	+8 °C	120 min.
Freezer	-18 °C	1	-50 °C	-15 °C	120 min.



## How to display the alarm log

- Press Prg/mute  and Set  and hold for 5 seconds;
- enter the password: 44
- Press Set  to access a submenu where UP  and DOWN  are used to scroll the various alarms, HS0 to HS9;
- Select an alarm and press Set  to display the code, hour, minutes and duration;
- From any of the sub parameters, pressing Prg/mute  will make the controller return to the parent parameter “HSx”;
- Press Prg/mute  for 5 seconds to return to the standard display.

Example :

‘HI’ -> ‘h17’ -> ‘m23’ -> ‘65’

indicates that alarm ‘HI’ (high temperature alarm) was activated at 17:23 and lasted 65 minutes.









## HACCP ALARMS

Two types of HACCP events are managed:

- type HA alarms, high temperature during the operation;
- type HF alarms, high temperature after power failure (blackout).

When an alarm is recorded, the HACCP LED flashes, the display shows the alarm code, the alarm is saved, and the alarm relay and buzzer are activated.



## How to display the HA and HF alarms

- Press Prg/mute  and DOWN  simultaneously
- Scroll the list of alarms pressing UP  and DOWN 
- Press Set  to select the required alarm
- Use UP  or DOWN  to see the description of the alarm: year, month, day, hours, minutes and duration in minutes of the selected alarm
- Press Prg/mute  again to return to the previous list.



In addition, the HACCP alarm menu allows the following operations:

## How to delete a HACCP alarm

- Press Set  & DOWN  for 5 seconds when displaying the list of alarms.

This causes the HACCP to flash, the display shows the message rES and the monitoring of HACCP alarms is reinitialised

## How to delete the entire memory of HACCP alarms

- Press Set  & UP  & DOWN  for 5 seconds.

This procedure displays the message rES, deletes the entire memory of alarms and reinitialises the monitoring of the HACCP alarms.

In order to be able to use the HACCP alarms, it is necessary that the real time clock has been adjusted by the installing company prior to handing over the cabinet to the end user. These adjustments are protected by an access code and can therefore not be made by the end user.

## Cabinet Light

On all cabinets the cabinet light is placed on the cabinet outside, above the door. This light is operated by the main controller which means that the way it works cannot be changed.

When the cabinet door is opened the light above the door is turned on. When closing the door, the cabinet light above the door will turn off.



## Errors and Alarms

Display code	Cause of the alarm	Icon flash on display	Alarm relay	Buzzer	Reset	Compressor	Defrost	Evaporator fans	Continuous cycle	Signalled on tLAN	Network solenoid valve
rE	Control probe fault		ON	ON	automatic	duty setting(c4)	unchanged	unchanged	unchanged	√	-
E1	Probe S1 fault		OFF	OFF	automatic	duty setting(c4)	unchanged	unchanged	unchanged	√	-
E2	Probe S2 fault		OFF	OFF	automatic	unchanged	unchanged	unchanged	unchanged	√	-
E3	Probe S3 fault		OFF	OFF	automatic	unchanged	unchanged	unchanged	unchanged	√	-
E4	Probe S4 fault		OFF	OFF	automatic	unchanged	unchanged	unchanged	unchanged	√	-
E5	Probe S5 fault		OFF	OFF	automatic	unchanged	unchanged	unchanged	unchanged	√	-
E6	Probe S6 fault		OFF	OFF	automatic	unchanged	unchanged	unchanged	unchanged	√	-
E7	Probe S7 fault		OFF	OFF	automatic	unchanged	unchanged	unchanged	unchanged	√	-
E8	Serial probe S8 not updated		OFF	OFF	automatic	duty setting(c4)	unchanged	unchanged	unchanged	√	-
E9	Serial probe S9 not updated		OFF	OFF	automatic	duty setting(c4)	unchanged	unchanged	unchanged	√	-
E10	Serial probe S10 not updated		OFF	OFF	automatic	duty setting(c4)	unchanged	unchanged	unchanged	√	-
E11	Serial probe S11 not updated		OFF	OFF	automatic	duty setting(c4)	unchanged	unchanged	unchanged	√	-
LO	Low temperature alarm		ON	ON	automatic	unchanged	unchanged	unchanged	unchanged	√	-
HI	High temperature alarm		ON	ON	automatic	unchanged	unchanged	unchanged	unchanged	√	-
LO2	Low temperature alarm		ON	ON	automatic	unchanged	unchanged	unchanged	unchanged	√	-
HI2	High temperature alarm		ON	ON	automatic	unchanged	unchanged	unchanged	unchanged	√	-
IA	Immediate alarm from external contact		ON	ON	automatic	duty setting(A6)	unchanged	unchanged	unchanged	√	-
dA	Delayed alarm from external contact		ON	ON	automatic	duty setting(A6) if A7≠0	unchanged	unchanged	unchanged	√	-
dor	Door open for too long alarm		ON	ON	automatic	unchanged	unchanged	unchanged	unchanged	√	-
Etc	Real time clock fault		OFF	OFF	automatic	unchanged	unchanged	unchanged	unchanged	√	-
LSH	Low superheat alarm		OFF	OFF	automatic	OFF	unchanged	unchanged	unchanged	√	√
LSA	Low suction temperature alarm		OFF	OFF	automatic / manual	OFF (paragraph 6.10)	unchanged	unchanged	unchanged	√	√
MOP	Maximum evaporation pressure alarm		OFF	OFF	automatic	OFF	unchanged	unchanged	unchanged	√	√
LOP	Low evaporation temperature alarm		OFF	OFF	automatic	unchanged	unchanged	unchanged	unchanged	√	√
bLo	Valve blocked alarm		OFF	OFF	manual/ disabled with P14=0	unchanged	unchanged	unchanged	unchanged	√	-
Edc	Communication error with stepper driver		ON	ON	automatic	unchanged	unchanged	unchanged	unchanged	√	-
EFS	Stepper motor broken/not connected		ON	ON	automatic	unchanged	unchanged	unchanged	unchanged	√	-
EE	Flash unit parameter error		OFF	OFF	automatic	OFF	not performed	OFF	not performed	√	-
EF	EEPROM operating parameter error		OFF	OFF	automatic	OFF	not performed	OFF	not performed	√	-
HA	Type HA HACCP alarm	<b>HACCP</b>	OFF	OFF	manual	unchanged	unchanged	unchanged	unchanged	√	-
HF	Type HF HACCP alarm	<b>HACCP</b>	OFF	OFF	manual	unchanged	unchanged	unchanged	unchanged	√	-
MA	Communication error with Master (only on Slave)		ON	ON	automatic	unchanged	unchanged	unchanged	unchanged	-	-
u1...u5	Communication error with Slave (only on Master)		ON	ON	automatic	unchanged	unchanged	unchanged	unchanged	-	-
n1...n5	Alarm on unit 1 to 5 in the network		ON	ON	automatic	unchanged	unchanged	unchanged	unchanged	-	-
up1...up5	Upload procedure with errors on unit 1 to 5		OFF	OFF	-	unchanged	unchanged	unchanged	unchanged	-	-
GPE	Error in custom gas parameters		ON	ON	automatic	OFF	not performed	OFF	not performed	√	-



For more information, please see the manual for the selected CO2 controller. (Carel MPX PRO)



### Operating the Product (No Controller – NC model)



Please see the manual supplied with the installed controller.

### Troubleshooting

#### Noise:

- If abnormal noise occurs, request service assistance.
- Operating sounds from the interior fan are normal.
- If sheet metal parts, front panels or panels in front of the compartment are making noise, these might be open. Close the panels.

#### Frosting inside compartment:

- Ambient humidity too high.
- The door is opened too often.
- The door is left open for too long.
- Damaged door gasket. Check it thoroughly for damages.

#### Poor cooling performance:

- Ambient temperature too high.
- The door is opened too often and/or open for too long.
- The door is left open.
- Damaged door gasket.
- Temperature setting too high.
- Product too packed with foods - air inlet/outlet blocked.
- Warm or hot foods inside the product.
- Defrost in progress. The cabinet temperature may rise temporarily during the defrost cycle, but it will not affect the foods inside. The defrost LED is lit.

#### Some of the foods are frozen:

- Product too packed with foods - air inlet/outlet blocked.
- Temperature setpoint too low.
- Evaporator fan might be defective.

#### Condensation around the door:

- Ambient humidity too high.
- The door is not closed tightly.
- Damaged door gasket.
- Parameter related to door frame heater has not been adjusted correctly.

#### Too high energy consumption:

- Ambient temperature too high.
- The door is opened too often and/or open for too long.
- The door is left open.
- Damaged door gasket.
- Temperature setpoint too low.
- Product is too packed with foods - air inlet/outlet blocked.
- Warm or hot foods are brought into the product.
- Product is placed in direct sunlight or close to heat-emitting surfaces.
- The default settings have been changed.



### Defrost Water

During defrosting, the product produces water, which is led into the re-evaporation system through a vacuum plastic at the top of the cabinet (For Premier Cabinets)

The water is re-evaporated with an electrical heating element and fan motor. In rare cases the use pattern of the cabinet creates more water than the product is capable of re-evaporating, which means that overflow of water can occur. If this happens the electrical heating element can be changed to run 100% or alternatively be disconnected and instead connect the water pipe on the back to a drain. These changes must be carried out by a skilled service technician.

### Door Closing Mechanism

The door is equipped with a self-closing system. If the door is opened less than 90°, it will close by itself. If the door is opened more than 90°, it will stay open.

The door can be opened by using the foot pedal. This leaves both hands free when placing foodstuffs in the cabinet.

### Power Failure

In the event of a power failure, the control remembers the temperature setting and restarts the product when power is restored.

### Cleaning

Insufficient cleaning will cause that the product will not work at optimum performance, or eventually it will be defective.



Before cleaning, the product should always be disconnected.



Do not flush the product with water, do not use water jet or steam hose as this may cause short-circuits in the electrical system.



Cleansing agents containing chlorine or compounds of chlorine as well as other corrosive means, **are not to be used**, as they might cause corrosion to the stainless panels of the cabinet and the evaporator.



The product must be kept free from dust and dirt. This is best done with a vacuum cleaner and a brush.



For the external maintenance – use stainless steel polish.



The product should be cleaned internally with a mild soap solution at suitable intervals and checked thoroughly before it is put into operation again.



### Door Gaskets

This chapter deals with the importance of a well-functioning door gasket.

Gaskets are an important part of a refrigerator/freezer. Gaskets with reduced functionality, reduces the tightness of the cabinet. Reduced tightness might cause increased humidity, internal icing, an iced up evaporator (leading to reduced refrigeration capacity), and in worst case reduced lifecycle of the cabinet.



Therefore, it is important to be aware of the condition of the gasket. Regular inspection is recommended.

The gasket should be cleaned regularly with a mild soap solution. If a gasket needs replacement, contact your supplier.

### Long Term Storage

If the product is taken out of operation, and need to be prepared for long-term storage, clean the inside compartment, the door and door gasket thoroughly with a hot soapy damp cloth. Eventual remnants of food could create mold.

### Service

If refrigeration fails, first investigate whether the unit has been unintentionally disconnected or switched off at the socket, or whether a fuse has blown.

If it is not possible to find the cause of the refrigeration failure, please contact the installer of the unit.

When contacting HOSHIZAKI or the Installer please inform us the name and serial number inside of the cabinet. This information is stated on the name plate,

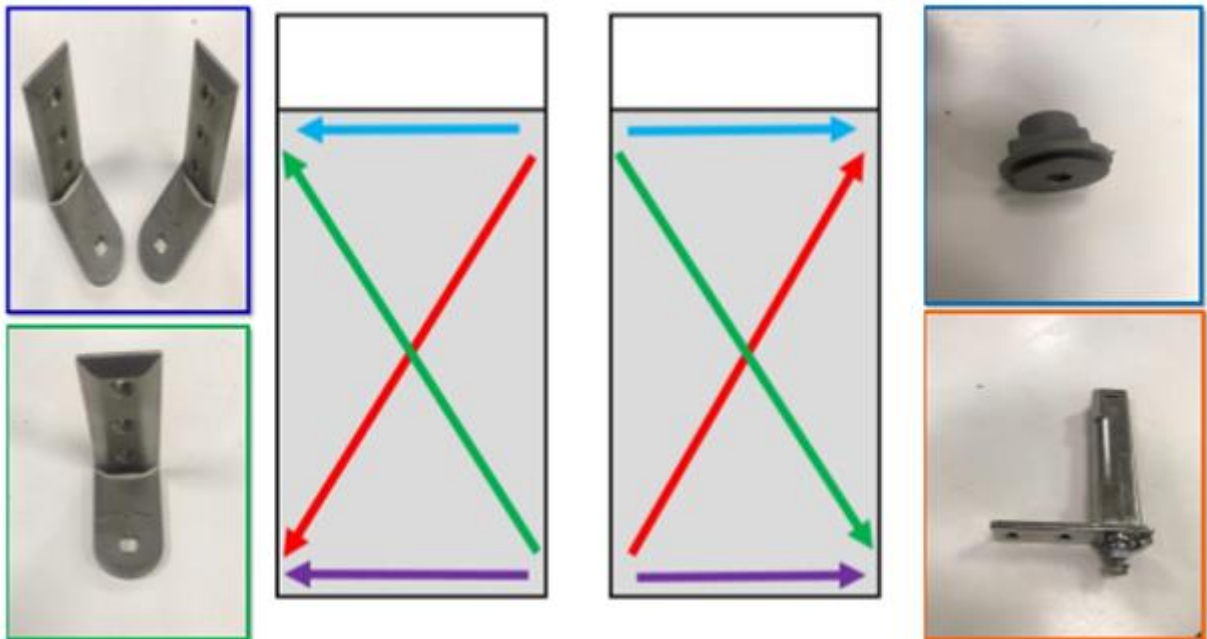


## Switching the Door Hinge Side

The door hinge side can be changed without additional parts. The hinge brackets are asymmetrical, so you must take special care to not get them mixed up – if in doubt, label them before making the modification.



**Since physical strength is required to change the door hinges on two opposite ends of the door, the door hinge change should be carried out by two suitably qualified persons for safety reasons. Otherwise, there is a risk of injury and damage to the cabinet.**



### Change from right to left:

The door is turned by 180°, then the hinge brackets are moved diagonally, rotated by 180°. The door closer is moved from the bottom right to the bottom left; the square with M8 internal thread is moved from the top right to the top left.

### Change from left to right:

The door is turned by 180°, then the hinge brackets are moved diagonally, rotated by 180°. The door closer is moved from the bottom left to the bottom right; the square with M8 internal thread is moved from the top left to the top right.



## HOSHIZAKI EUROPE

The following description applies to the modification from right to left. In the opposite situation, the corresponding procedure is reversed.

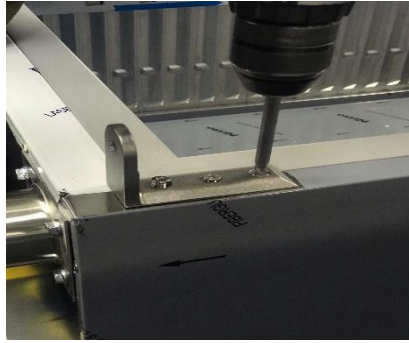
		
<p>1. Remove the fastening screw in the middle at the bottom edge of the canopy.</p>	<p>2. Fold the canopy upwards and secure it against folding back down using adhesive tape or similar.</p> <p> <b>Risk of injury!</b></p>	<p>3. Open the door at an angle of around 120°.</p>
		
<p>4. Remove the screw from the door closer square at the bottom right hinge (wrench size 8 mm).</p>	<p>5. Remove the fastening screw on the top right hinge (wrench size 13 mm).</p>	<p>6. Pull out the door under the top hinge bracket and lift it out of the lower hinge bracket.</p>



## HOSHIZAKI EUROPE



7. Remove the door closer without turning the door closer square.



8. Move the hinges from the bottom right to the top left, and from the top right to the bottom left; PH2 screwdriver.



9. Remove the blind plugs for this.



10. Move the lock fitting from the former top edge to the intended top edge of the door.



11. Place the door closer at the bottom left at an opening angle of 180°, and put the bottom left corner of the door over the door closer with the recess provided.



12. Push the top left door corner over the hinge bracket there and screw in the M8 screw.



13. Screw in the fastening screws of the door closer at the bottom left.



14. Break out the left recess at the bottom of the canopy flap.



15. Close and screw on the canopy.



## Removing and Reattaching the Evaporator Cover

The cover of evaporator can be removed and reattached for purpose of service according to the following procedure:

### Removing the Evaporator Box:



1) There must be no traces of putty on the Evaporator Box surface, it must be removed.



2) Loosen the belts that secure the evaporator box and carefully remove to avoid damage. The Evaporator Box needs to be lifted carefully not damaging box.

### Checking and Reattaching the Evaporator Box:



1) Remove all putty from surface of evaporator box.



2) O-ring must be placed in its slot. O-ring should be attached to the box in order to prevent the possibility of air intake.



3) 2-3 mm thick putty should be applied to box duct.



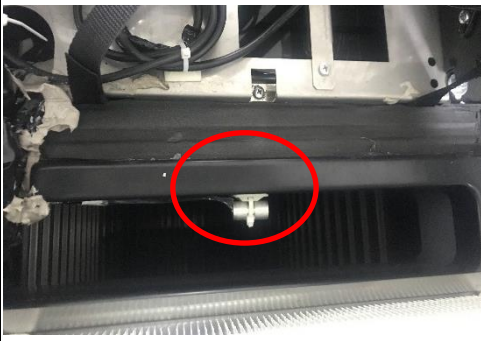
4) Probes and inlet/outlet pipes which connected with Evaporator must cover by PVC insulation tape and make sure all these elements adjust properly.



5) Make sure the sensor position is right and suitable and drain path must be checked.



6) There must be sheet plate under the Defrost Heater to prevent plastic surface from melting.



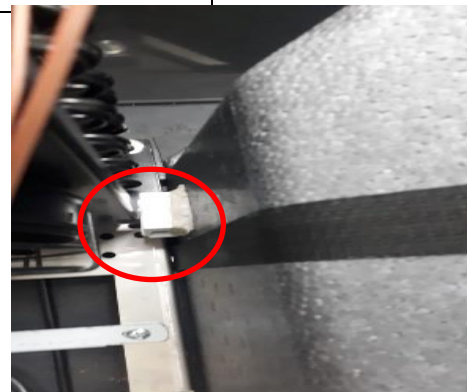
7) Make sure the sensor is correctly positioned and drain path is checked.



8) After fitting the evaporator box secure the belts and do not overtighten. Make sure there are no gaps around the base of the box.



9) Make sure the pipe and cable entry point is fully sealed with putty.



10) Vacuum Breaker must be sealed by putty, it must be also checked by service technicians!



## Technical Support and Ordering Spare Parts

Technical support for **resellers and service partners:**

### Branches

#### Hoshizaki UK - UK, Ireland

TEL: +44 845 456 0585  
[uksales@hoshizaki.co.uk](mailto:uksales@hoshizaki.co.uk)

#### Hoshizaki Deutschland - Germany, Switzerland, Austria

TEL: +49 (0)5121 697370  
[vertrieb@hoshizaki.de](mailto:vertrieb@hoshizaki.de)

#### Hoshizaki Benelux - Netherlands, Belgium, Luxembourg

TEL: +31 (0)85 0188370  
[info@hoshizaki.nl](mailto:info@hoshizaki.nl)

#### Hoshizaki France - France

TEL: +33 (0)1 48 63 93 80  
[info@hoshizaki.fr](mailto:info@hoshizaki.fr)

#### Hoshizaki Iberia - Spain, Portugal

TEL: +34 (0)93 478 09 52  
[info@hoshizaki.es](mailto:info@hoshizaki.es)

#### Hoshizaki Denmark - Denmark

TEL.: +45 89 88 53 50  
[salg@hoshizaki.dk](mailto:salg@hoshizaki.dk)

#### Hoshizaki Norway - Norge

TEL.: +47 22 88 17 50  
[salg@hoshizaki.no](mailto:salg@hoshizaki.no)

#### Hoshizaki Sweden - Sverige

TLF.: +46 108 84 87 47  
[OrderSE@hoshizaki.dk](mailto:OrderSE@hoshizaki.dk)

#### Hoshizaki Italia – Italia

TEL: +39 348 3022156  
[commerciale@hoshizaki.it](mailto:commerciale@hoshizaki.it)

#### Hoshizaki Europe B.V – All other countries in Europe and Africa

TEL: +31 (0)20 691 84 99  
[sales@hoshizaki.nl](mailto:sales@hoshizaki.nl) -- <http://hoshizaki-europe.com/>

In the event of faults, please first check if the cabinet is connected to the mains, then check the fault indicator on the display and consult the service manual.

Spare parts can only be ordered **from commercial resellers** (refrigeration specialist companies, dealers, purchasing cooperatives) and **in writing (e-mail, fax, conventional mail)**.









**Please always note the cabinet type, part number and serial number when making enquiries and placing orders. This information can be found on the label.**

**If you have a smartphone, we recommend sending us a photo of the label and, if in doubt, of the cabinet and the defective part as well.**



## Technical Data

Placement of the label:

PRODUCT DESCRIPTION LABEL																														
1 Product Number		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 70%;">PRODUCT NUMBER</td> <td style="width: 30%; text-align: center;">1</td> </tr> <tr> <td colspan="2" style="text-align: center;">  </td> </tr> <tr> <td>PRODUCT DESCRIPTION</td> <td style="text-align: center;">2</td> </tr> <tr> <td>MODEL</td> <td style="text-align: center;">3</td> </tr> <tr> <td>REFRIGERANT</td> <td style="text-align: center;">4</td> </tr> <tr> <td>CO2 EQUIVALENT</td> <td style="text-align: center;">5</td> </tr> <tr> <td>IP PROTECTION</td> <td style="text-align: center;">6</td> </tr> <tr> <td>CLIMATE CLASS</td> <td style="text-align: center;">7</td> </tr> <tr> <td>PRODUCTION DATE</td> <td style="text-align: center;">8</td> </tr> <tr> <td>TOTAL POWER / CURRENT / LAMP POWER</td> <td style="text-align: center;">9</td> </tr> <tr> <td>VOLTAGE - FREQUENCY</td> <td style="text-align: center;">10</td> </tr> <tr> <td>HEATING ELEMENT</td> <td style="text-align: center;">11</td> </tr> <tr> <td>SYSTEM PRESSURE</td> <td style="text-align: center;">12</td> </tr> <tr> <td>BLOWING AGENT</td> <td style="text-align: center;">13</td> </tr> </table>	PRODUCT NUMBER	1			PRODUCT DESCRIPTION	2	MODEL	3	REFRIGERANT	4	CO2 EQUIVALENT	5	IP PROTECTION	6	CLIMATE CLASS	7	PRODUCTION DATE	8	TOTAL POWER / CURRENT / LAMP POWER	9	VOLTAGE - FREQUENCY	10	HEATING ELEMENT	11	SYSTEM PRESSURE	12	BLOWING AGENT	13
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3 Model																														
4 Refrigerant (GWP)																														
5 CO2 Equivalent																														
6 IP Protection																														
7 Climate Class																														
8 Production Date																														
9 Total power / Current / Lamp power																														
10 Voltage - Frequency																														
11 Heating Element																														
12 System Pressure																														
13 Blowing Agent																														
14 Serial Number		<p>S/N: 14</p>  <p>HOSHIZAKI EUROPE B.V. Burgemeester Stramanweg 101 1101 AA Amsterdam, The Netherlands</p> <div style="display: flex; justify-content: space-around; align-items: center;">    </div>																												

Trade mark			HOSHIZAKI			
Model name			PREMIER U 70	PREMIER U 140	PREMIER U 80	PREMIER U 60
Intended use			Storage	Storage	Storage	Storage
Chilled operating temperature			X	X	X	X
Frozen operating temperature			X	X	X	X
Multiuse cabinet						
Vertical cabinet			X	X	X	X
Counter cabinet						
Parameter	Symbol	Unit				
Gross Volume	VnT	L	700	1400	700	480
Climate Class			CC5	CC5	CC5	CC5
Supply Voltage / Frequency	V / Hz		230 - 50	230 - 50	230 - 50	230 - 50
Refrigerant (CO2 Cabinet)			CO2	CO2	CO2	CO2
Refrigerant (RU-1 Cabinet)			HFC / HFO Refrigerant*	HFC / HFO Refrigerant*	HFC / HFO Refrigerant*	HFC / HFO Refrigerant*
Contact details:	<p>HOSHIZAKI EUROPE B.V.</p> <p><b>Address:</b> Burgemeester Stramanweg 101 1101 AA Amsterdam, The Netherlands</p> <p><b>Tel:</b> +31 (0)20 691 84 99 - <a href="http://hoshizaki.europe.com/">http://hoshizaki.europe.com/</a></p>					

\* Refrigerants that compatible with orifice (R449A, R448A, R45A, etc. Please check the datasheet of using orifice)



# HOSHIZAKI EUROPE

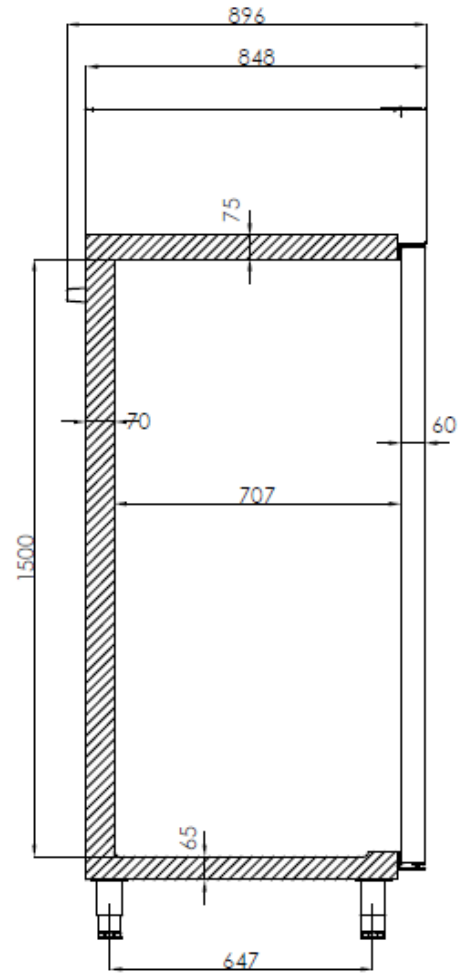
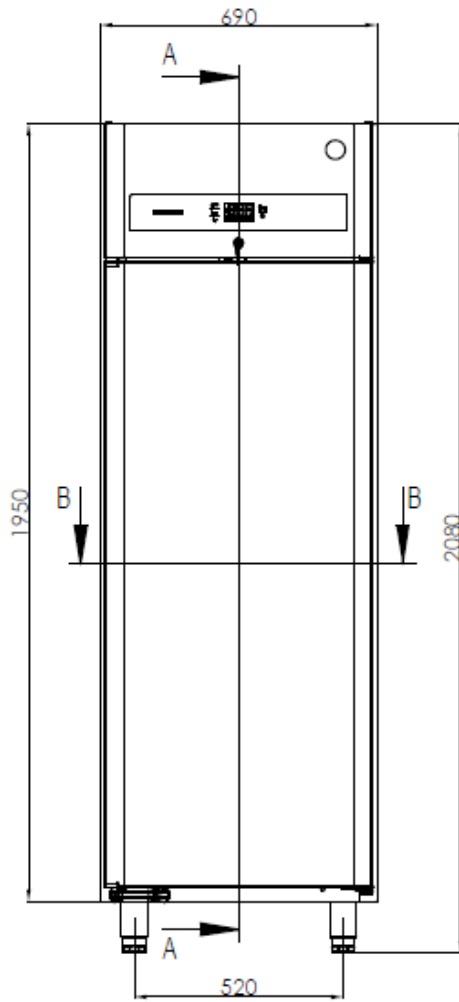
Trade mark			HOSHIZAKI		
Model name			BAKER U 950	BAKER GA 950	PREMIER SF 950
Intended use			Storage	Cooling /Freezing / Storage / Proving	Cooling / Shock Freezing
Chilled operating temperature			X	X	X
Frozen operating temperature			X	X	X
Multiuse cabinet				X	X
Vertical cabinet			X	X	X
Counter cabinet					
<b>Parameter</b>	<b>Symbol</b>	<b>Unit</b>			
Gross volume	VnT	L	1000	950	950
Climate Class			CC5	CC5	CC5
Supply Voltage / Frequency	V / Hz		230 - 50	230 – 50	230 – 50
Refrigerant (RU-1 Cabinet)			HFC / HFO Refrigerant*	HFC / HFO Refrigerant*	HFC / HFO Refrigerant*
Contact details:	<p>HOSHIZAKI EUROPE B.V.</p> <p><b>Address:</b> Burgemeester Stramanweg 101 1101 AA Amsterdam, The Netherlands</p> <p><b>Tel:</b> +31 (0)20 691 84 99 - <a href="http://hoshizaki.europe.com/">http://hoshizaki.europe.com/</a></p>				

\* Refrigerants that compatible with orifice (R449A, R448A, R45A, etc. Please check the datasheet of using orifice)

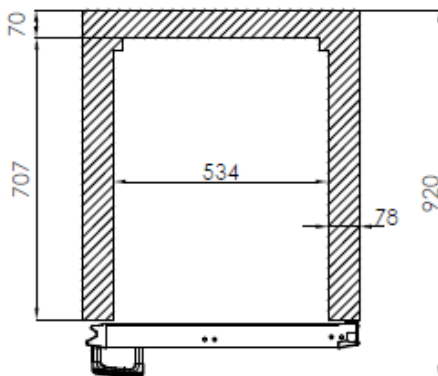


# Dimensions

## PREMIER 70



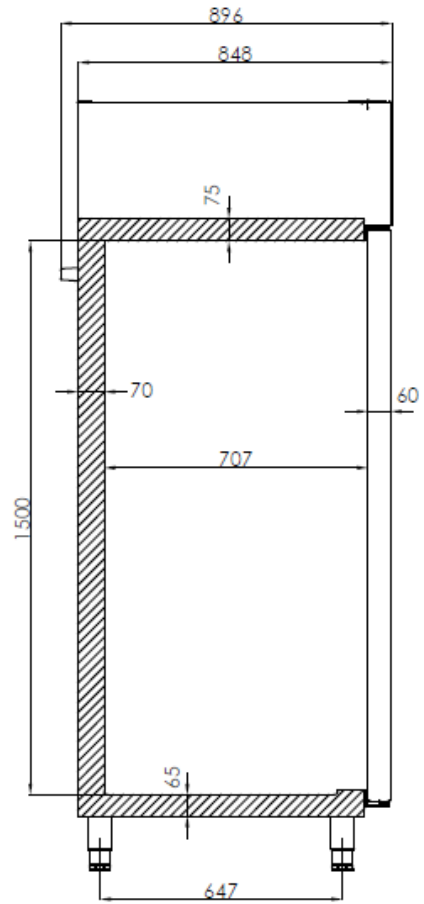
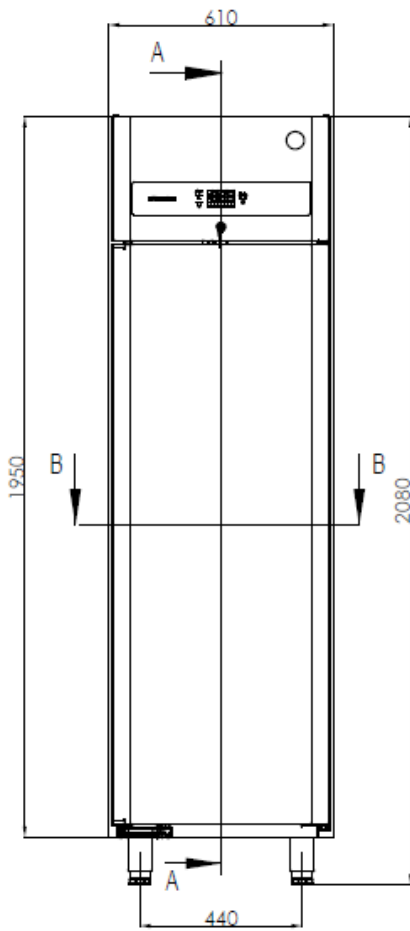
A.A



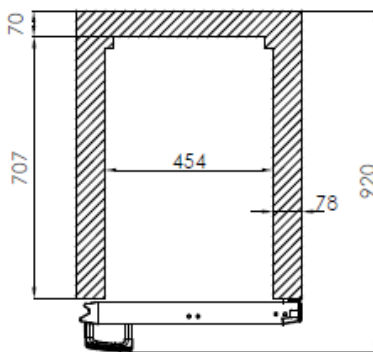
B-B



PREMIER 60



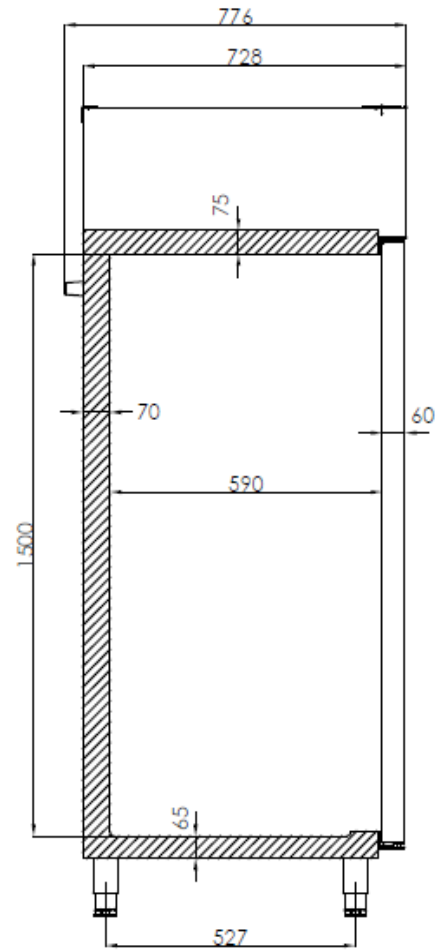
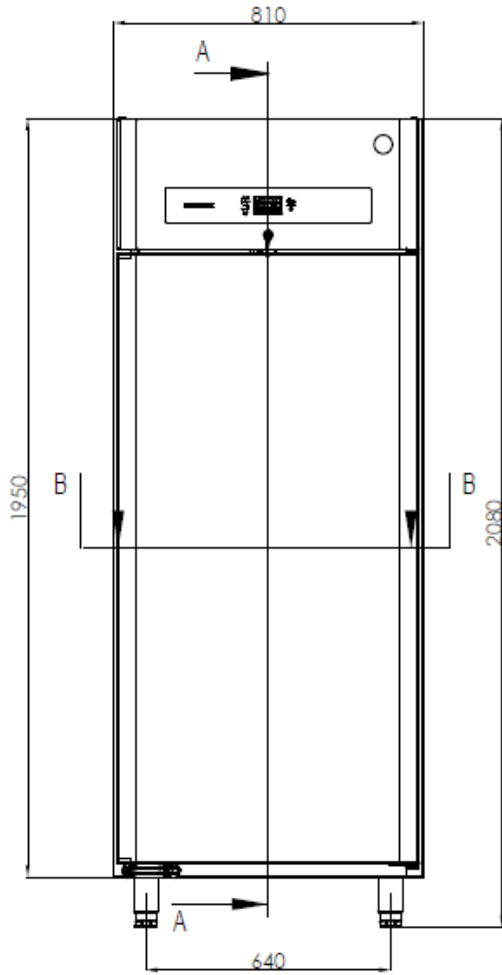
A-A



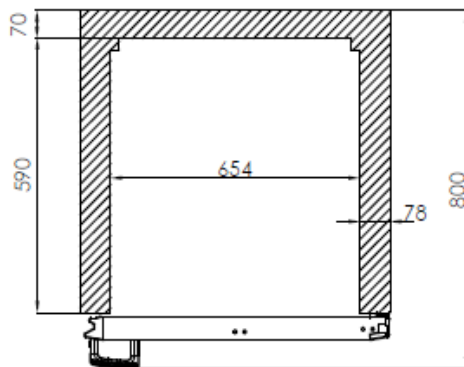
B-B



PREMIER U 80



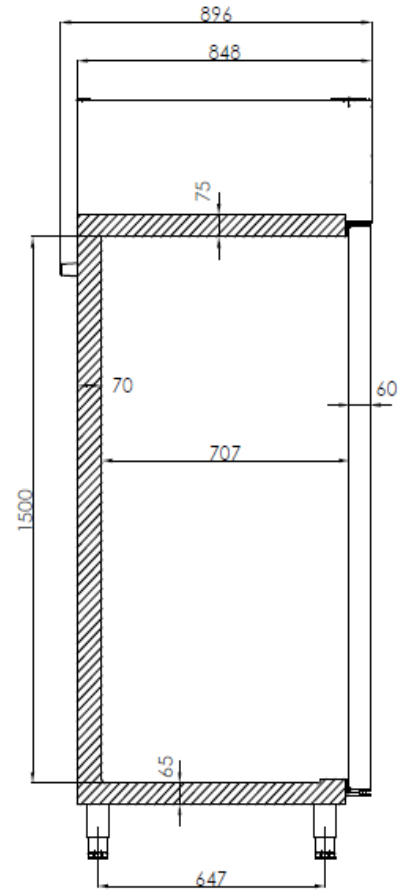
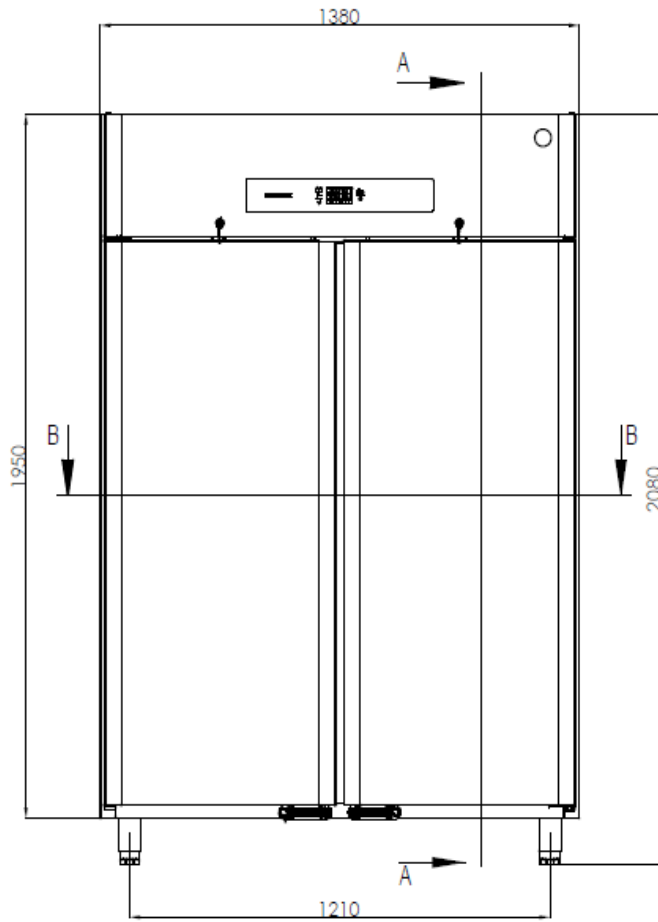
A-A



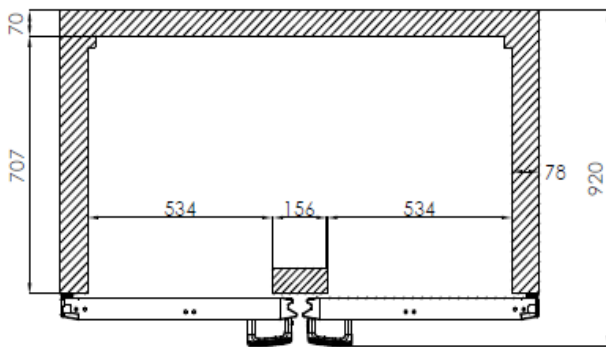
B-B



PREMIER 140



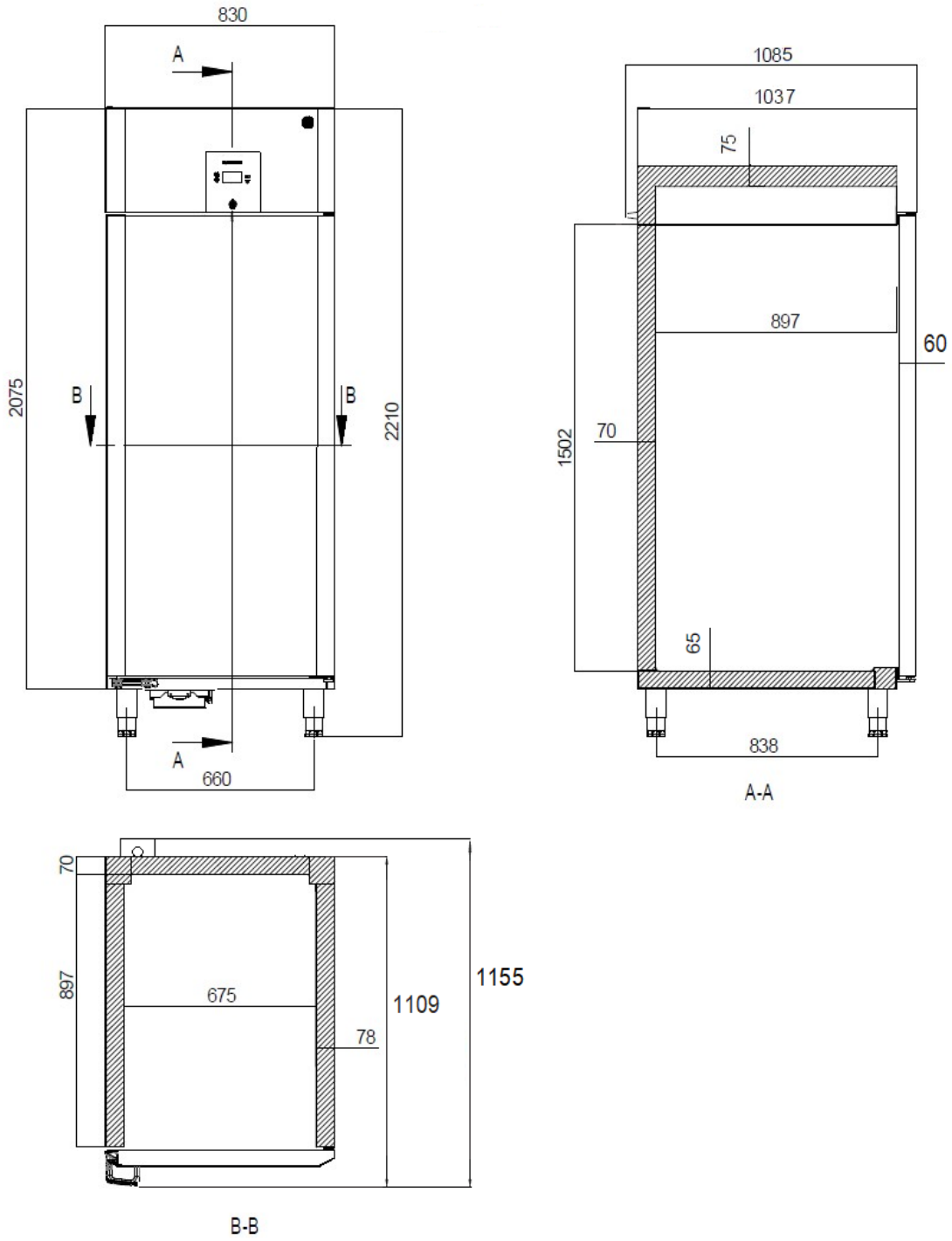
A-A



B-B

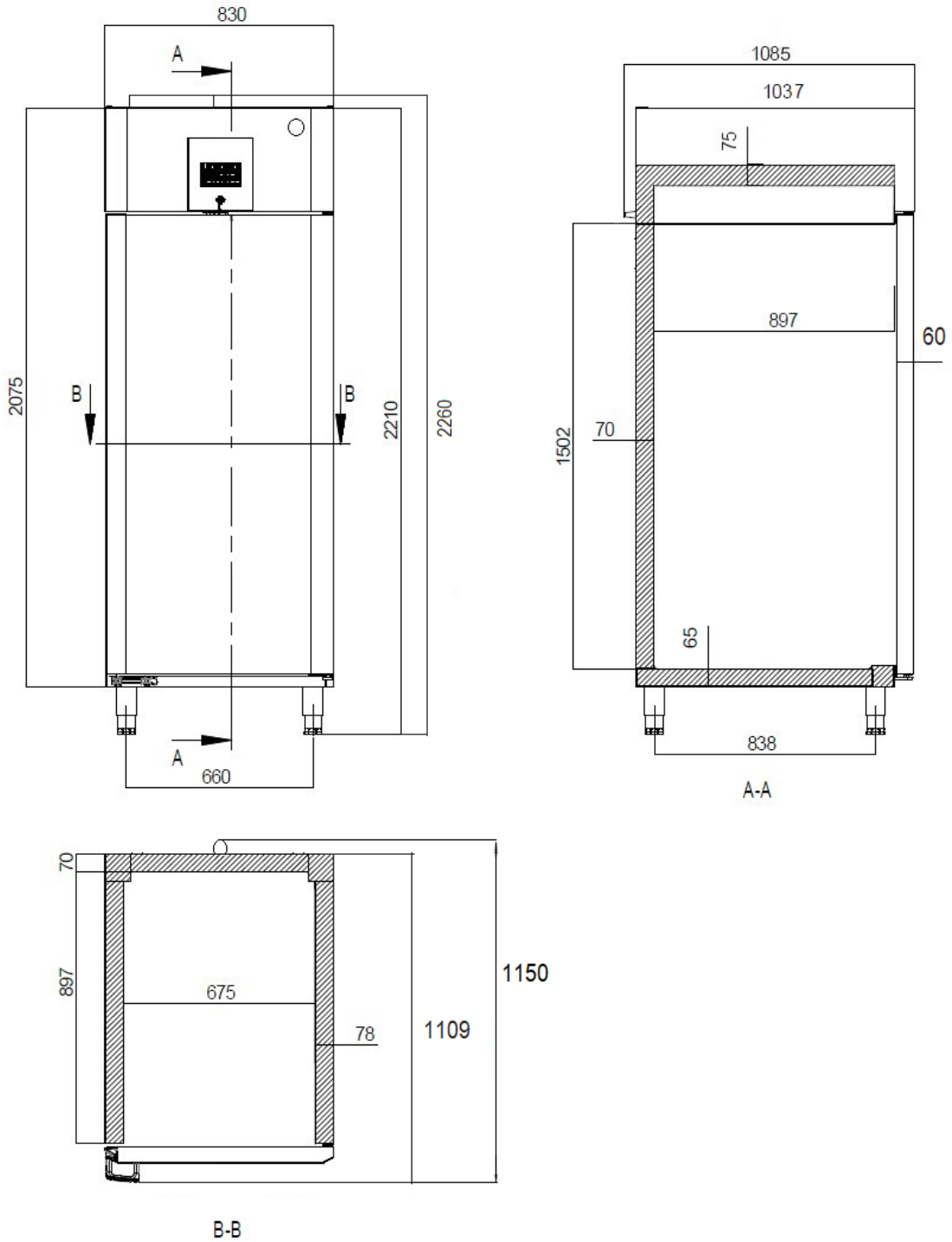


BAKER U 950



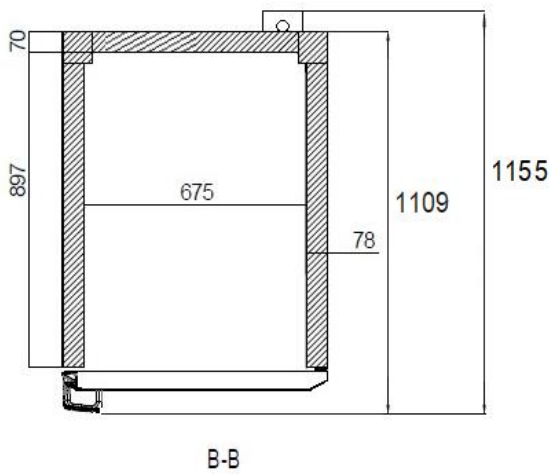
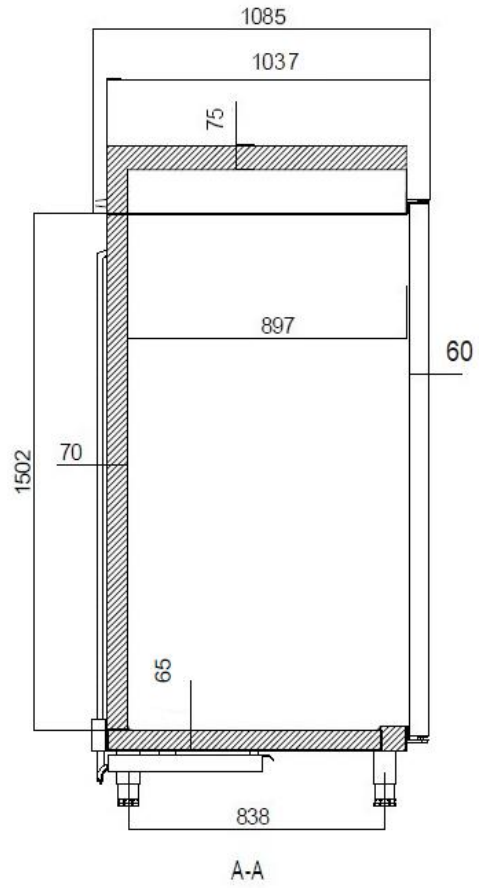
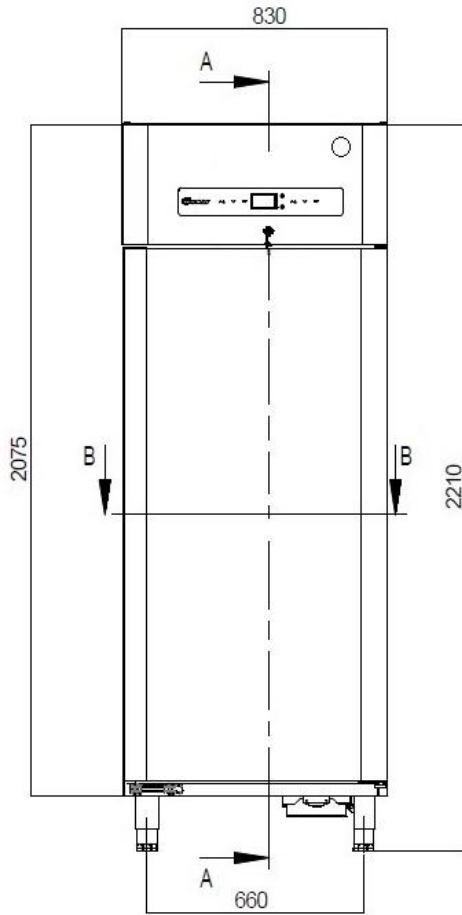


BAKER GA 950





BAKER SF 950





## Disposal

The below only concerns the United Kingdom.

Disposal of an old cabinet is only available when we are delivering a new one at the same time. Cabinets must be fully defrosted and emptied prior to collection.

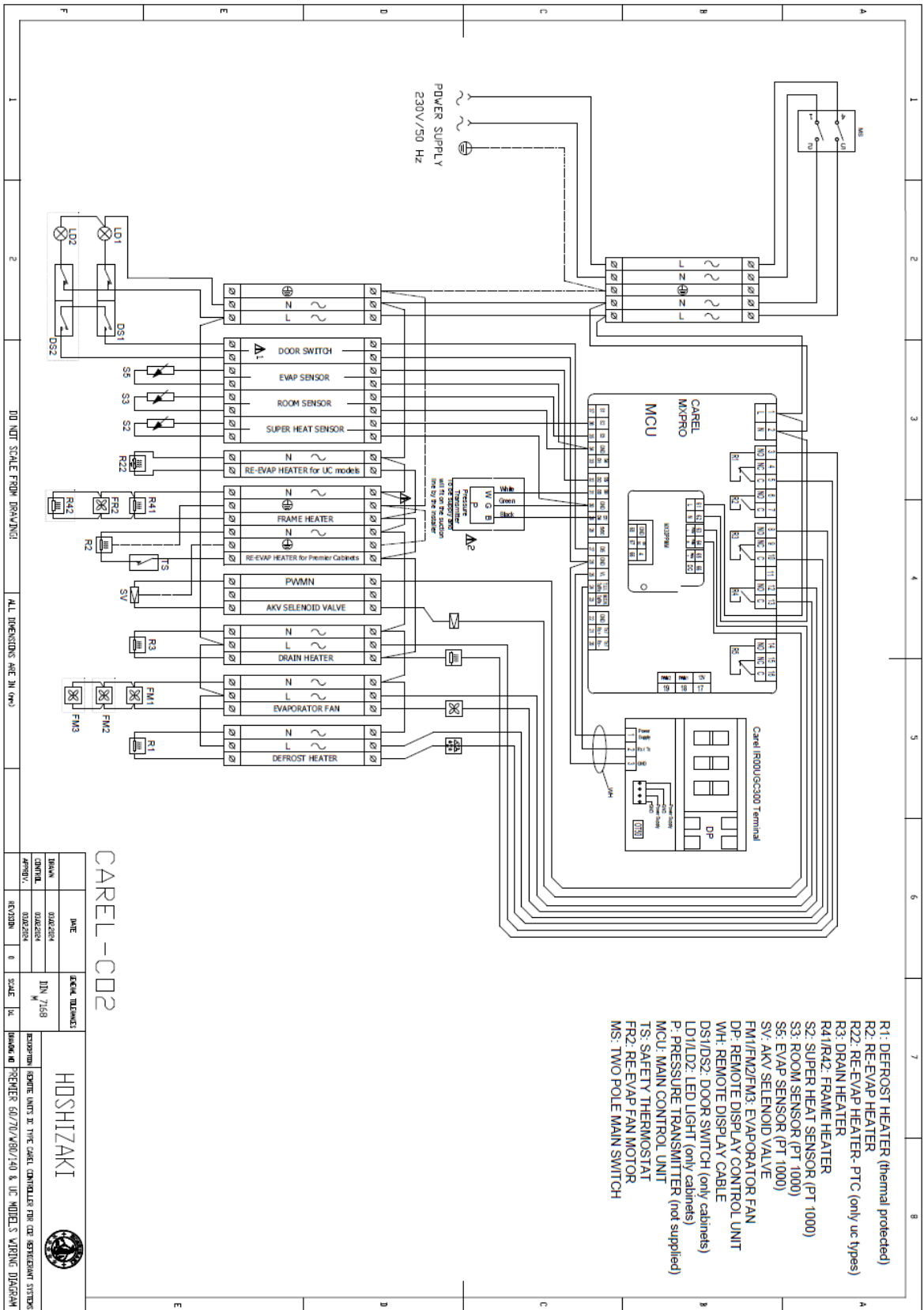
Hoshizaki recognizes that our products for the catering market are considered as WEEE when they become obsolete. To ensure that Hoshizaki's responsibilities are handled correctly and environmentally friendly, we are signed up the largest Business to Business compliance scheme in the UK – B2B Compliance  
<http://www.b2bcompliance.org.uk>

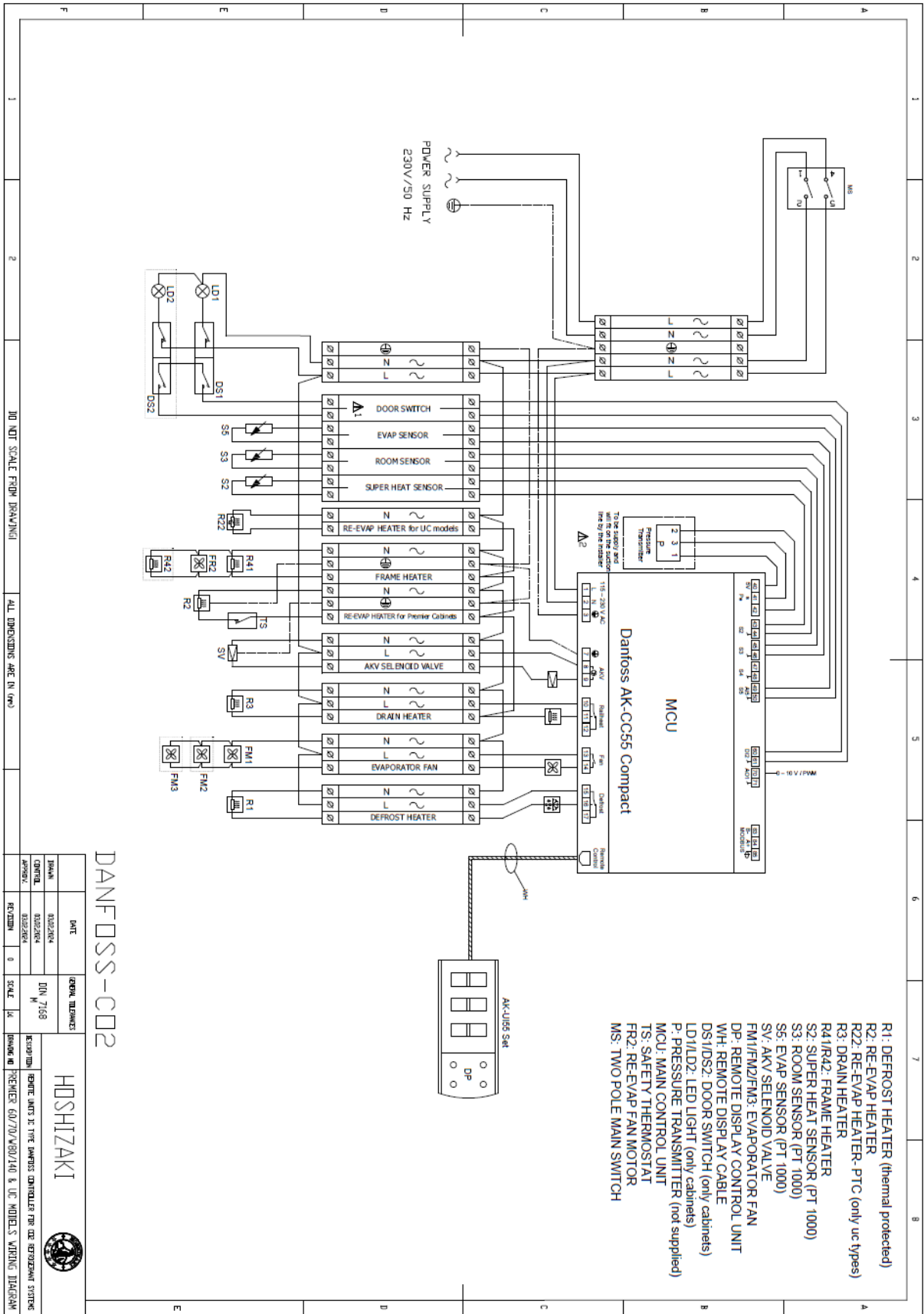
B2B Compliance will on our behalf deal with all areas of our responsibilities when collecting and disposing of equipment which fall under the UK WEEE regulations. B2B Compliance can be contacted on telephone number 01691 676124.



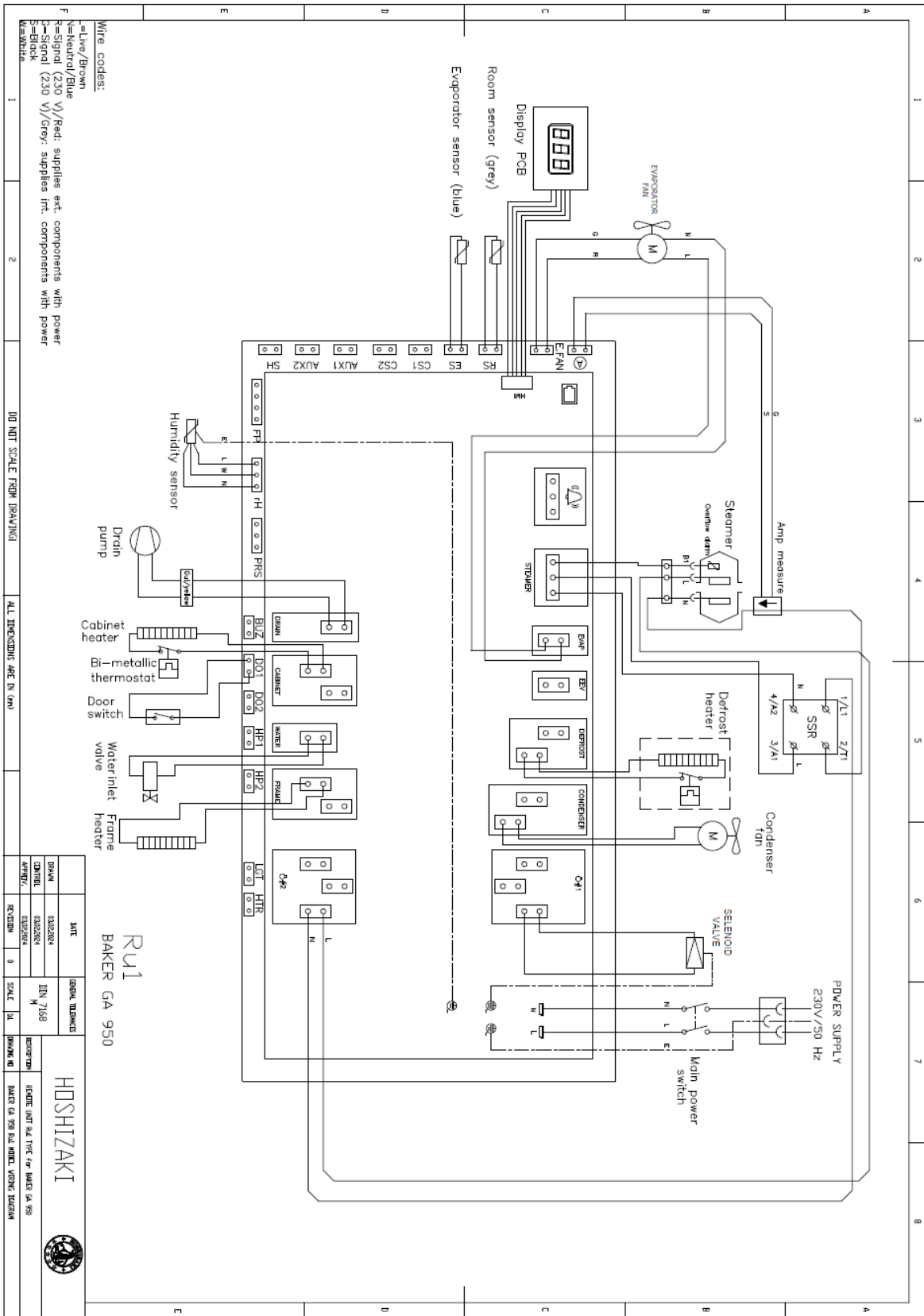


Electrical Wiring Diagrams



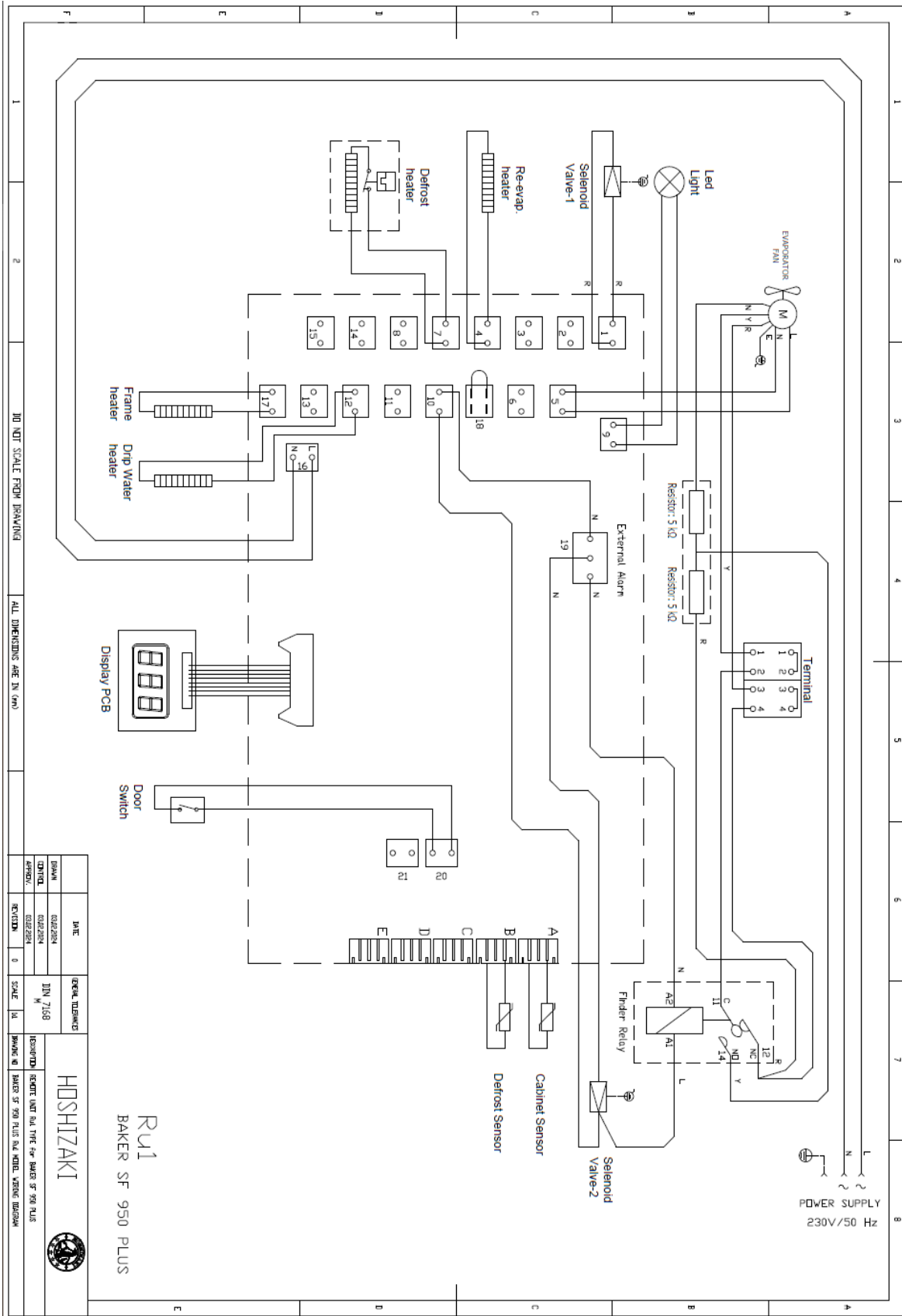


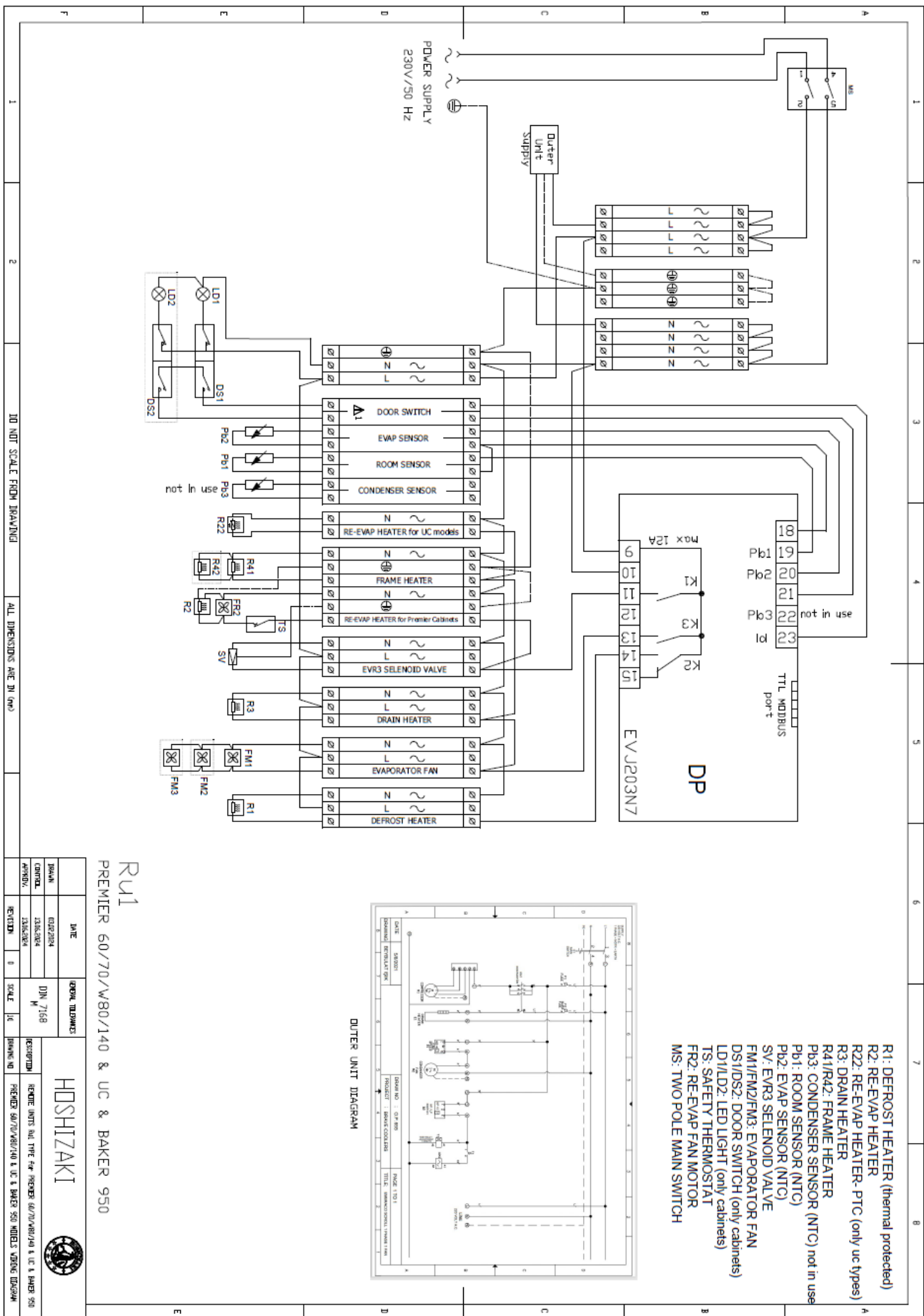






# HOSHIZAKI EUROPE



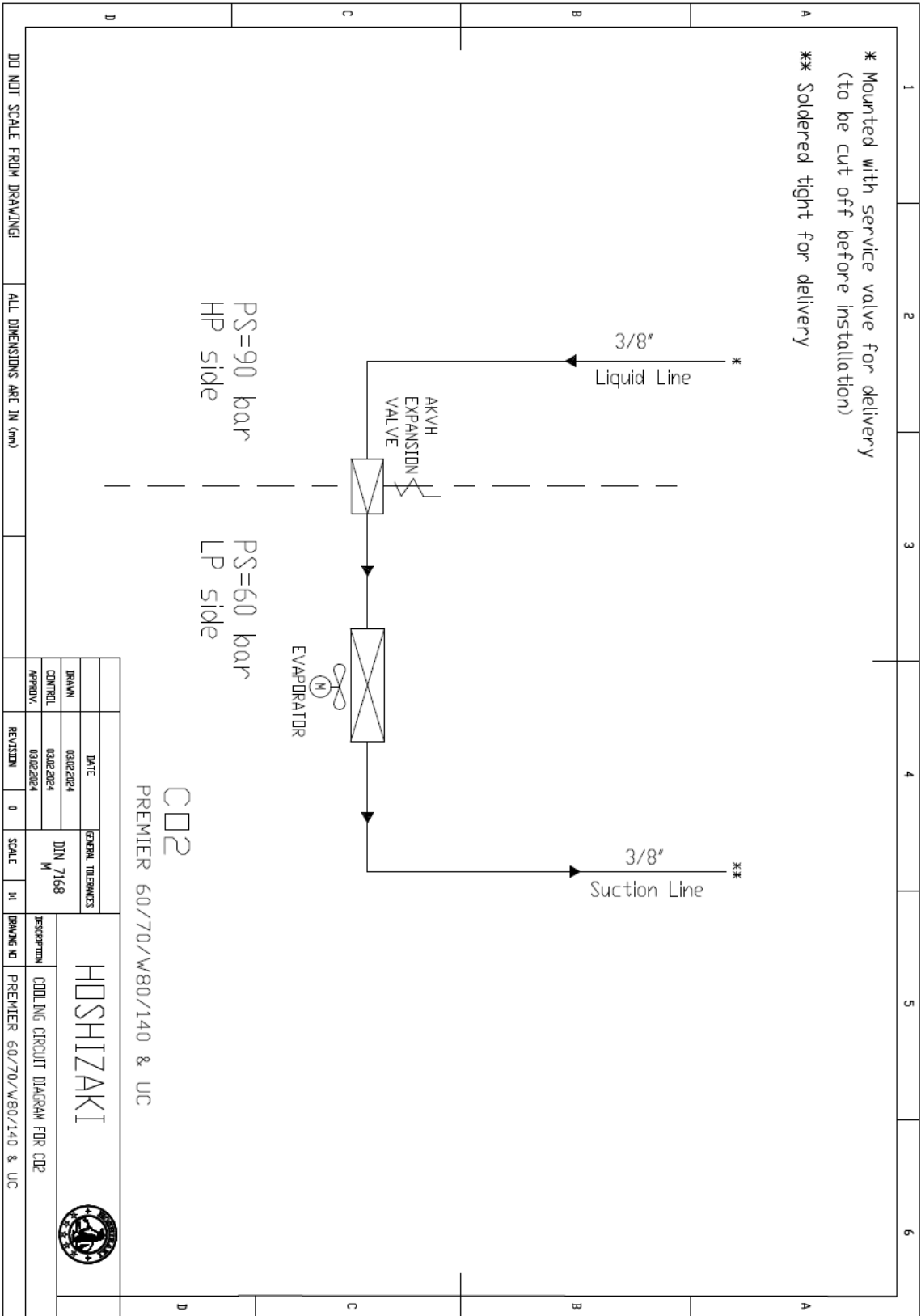


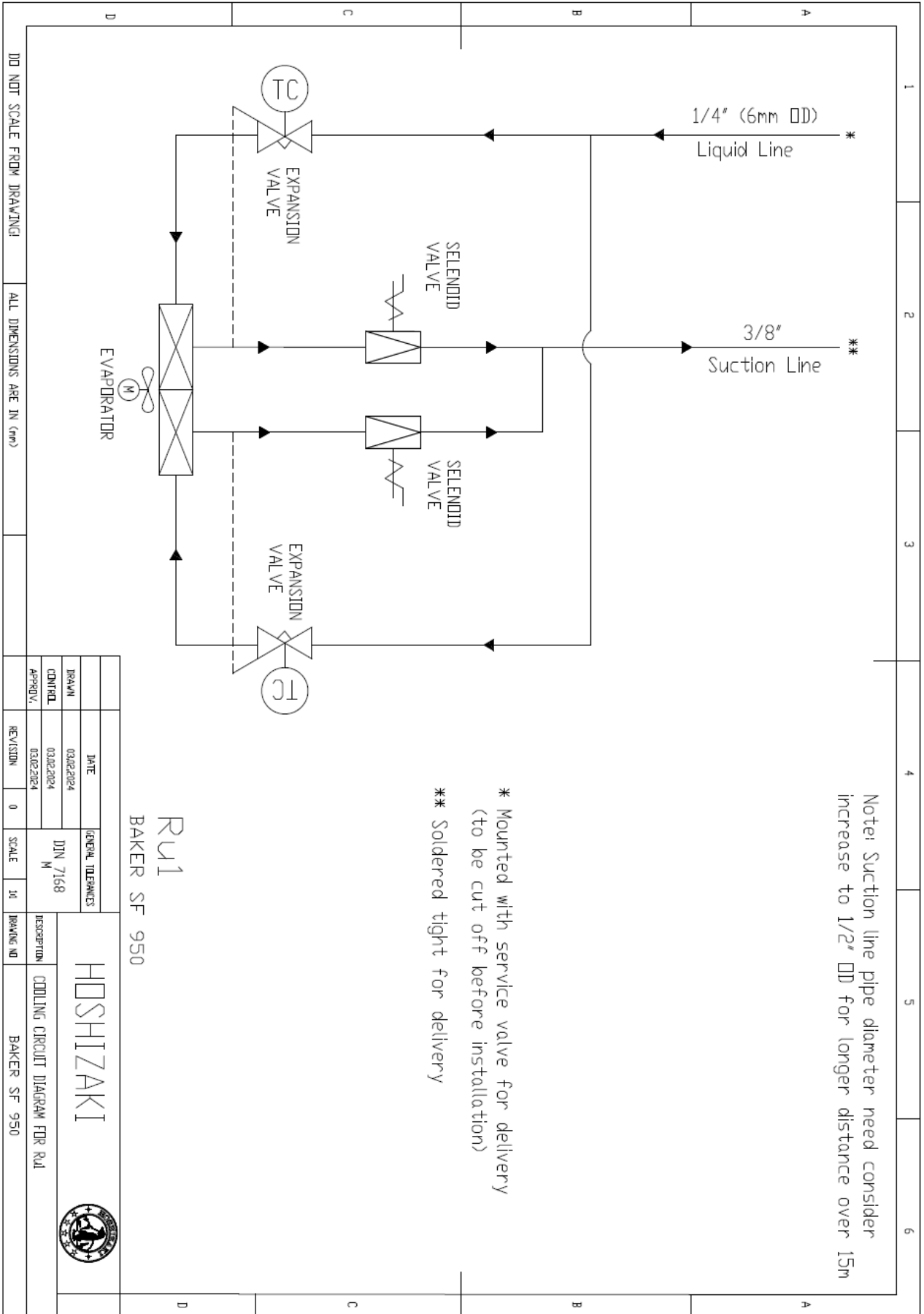
**RUI**  
 PREMIER 60/70/W80/140 & UC & BAKER 950

DATE	GENERAL DIMENSIONS	<b>HOSHIZAKI</b>
DRAWN: G. BAZZANI	DIN 7168	
CHECKED: S. MARCONI	M	HOSHIZAKI EUROPE LTD PREMIER 60/70/W80/140 & UC & BAKER 950 WIRELESS VARIANTE DIAGRAM
REVISED: S. MARCONI	SCALE: 1:1	



Cooling Diagrams





Note: Suction line pipe diameter need consider increase to 1/2" OD for longer distance over 15m

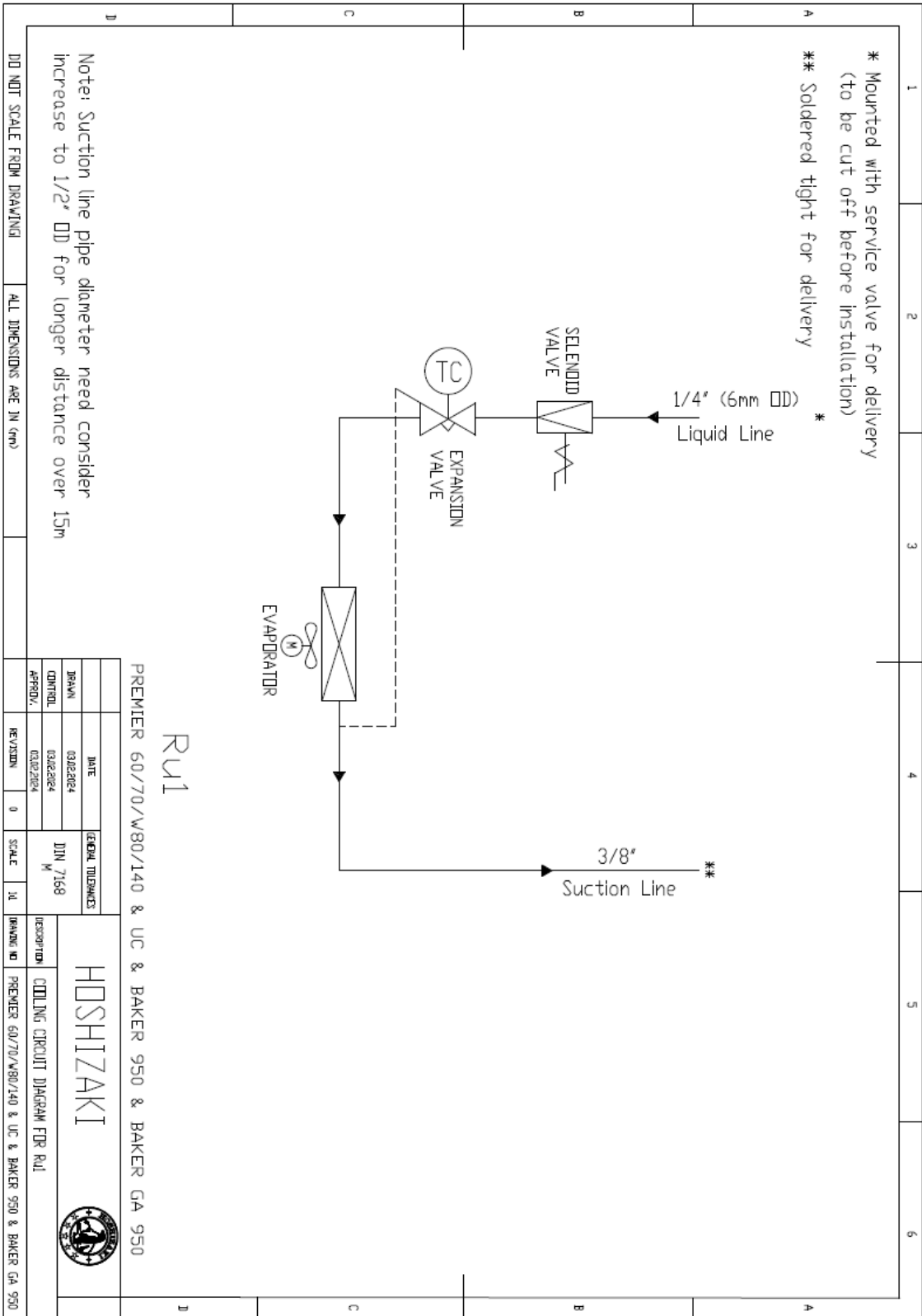
\* Mounted with service valve for delivery (to be cut off before installation)  
\*\* Soldered tight for delivery

Ru1  
BAKER SF 950

DATE	03/02/2024	GENERAL TOLERANCES	DIN 7168 M	RECEPTION	COOLING CIRCUIT DIAGRAM FOR Ru1						
DRAWN	03/02/2024	APPROV.				REVISION	0	SCALE	1:1	DRAWING NO	BAKER SF 950
CONTROL	03/02/2024	03/02/2024				0	SCALE	1:1	DRAWING NO	BAKER SF 950	

HOSHIZAKI







## Installation

### IC MODEL INSTALLATION

These products have been designed, constructed and built to minimize the time which the installer must use before and after connecting them to the remote CO<sub>2</sub> – installation. On cabinets referred to as IC, with a built-in controller (either Danfoss AK - CC55 or Carel MPXpro), every electrical component is already connected to the controller and the controller is configured accordingly. All controller parameter setups have been made in cooperation with the two controller manufacturers (Danfoss or Carel), in order to make sure that the cabinet will run when connected. There might of course be settings which need to be changed/adapted in order to optimize performance according to the remote system.

A few examples:

Solid door cabinets are delivered with a universal set point range +12 to -25°C, which means that the cabinets can be installed as a fridge or as a freezer. The reason for this is that all solid door cabinets are delivered as a freezer configuration, including electrical defrost heater, door frame heater etc. for maximum flexibility during installation.

If the cabinet is to run as a refrigerator it will most likely be connected to a remote system which will run a suction pressure no lower than -10°C (often even higher). in this case it is recommendable to raise the minimum allowed set point to approx. +2°C. which does mean that the adjustment range will be +2 to +12°C.

If the same universal cabinet is to run as a freezer, connected to a remote freeze system, the range should be narrowed to e.g. -5 to -25°C or similar, to suite the settings of the remote system.



The difference between controller minimum setpoint temperature and the minimum suction pressure should never be less than 7K.

### IMPORTANT!

- People installing these products, should have the right skill level.
- This does relate to all aspects. (physical installation as well as adapting the controller settings of the chosen controller, in order to avoid problems or potentially dangerous situations)
- Always make sure that the cabinet is properly leveled when positioned on the installation location. This should be done prior to connecting the pipe work to the remote CO<sub>2</sub> system



### Commonly used parts on all IC upright storage cabinets:

The refrigeration system on the cabinet consists of:

- An evaporator (RU1 Model include this component as well)
- A Danfoss AKV-10P1 electronic expansion valve with solenoid coil and the copper pipes used to connect the system. (RU1 Model include this component as well)
- 3 temperature sensors Danfoss PT1000 marked according to Danfoss standard room sensor (S3), super-heat sensors (S2) and Evaporator/defrost sensor (S5) are AKS11.  
(RU1 Model include 2 NTC Sensor for Evaporator and Room)
- A Carel suction line pressure transducer (0-5V radiometric type (0-45 bar gauge) female connection = 7/16"-20UNF - 45° flare (1/4" SAE Female)) Only connected electrically – To be fitted on the suction line by the installer.

After assembly, the system is pressure tested with 90 bar.

Recommended installation of pressure transmitter horizontally in the suction line  
(Done by the installer)

All parts are assembled and fitted on the cabinet, so that the installer does not need to access the evaporator compartment or the controller box, during installation.

Exception: it will be necessary to open the controller box:

- in order to connect the cabinet controller to an external surveillance system. (Done by the installer)
- if e.g. drain line heater needs to be disconnected, when connection to an external drain solution.



## NC MODEL INSTALLATION

These products have been designed, constructed and built to minimize the time which the installer must use before and after connecting them to the remote CO<sub>2</sub> – installation. On cabinets without controller known as NC, every electrical component is already fitted and connected to a connection plinth inside the control box. Inside the control box a DIN rail is fitted in order to ease mounting of any controller.

When installing the controller of your choice, you should take into consideration, that solid door cabinets are delivered equipped with components which makes the product capable of running with a temperature set point range between +12 and -25°C. This means that the cabinets can be built as a fridge or as a freezer. The reason for this is the desire of leaving maximum flexibility to the installer/refrigeration company when building the product needed. This fact does also mean that the following heaters are included:

Electrical defrost heater, drain line heater, re-evaporation heater and door frame heater. These heaters are not necessarily to be used if a refrigerator is to be configured.

If the cabinet is to run as a refrigerator it will most likely be connected to a remote system which will run a suction pressure no lower than -10°C. in this case it is recommendable to raise the minimum allowed set point to no lower than +2°C. which does mean that the adjustment range will be +2 to +12°C.



The difference between controller minimum setpoint temperature to be maintained inside the product and the minimum suction pressure should never be less than 7K.

If the NC cabinet is to run as a freezer the set point temperature range should be narrowed according to the performance of the freezer system to which it is connected. E.g. -5 to -25°C or similar.

### IMPORTANT!

- People installing these products, should have the right skill level.
- This does relate to all aspects. (physical installation as well as adapting the controller settings of the chosen controller, in order to avoid problems or potentially dangerous situations)
- Always make sure that the cabinet is properly leveled when positioned on the installation location. This should be done prior to connecting the pipe work to the remote CO<sub>2</sub> system



### Commonly used parts on all upright storage cabinets:

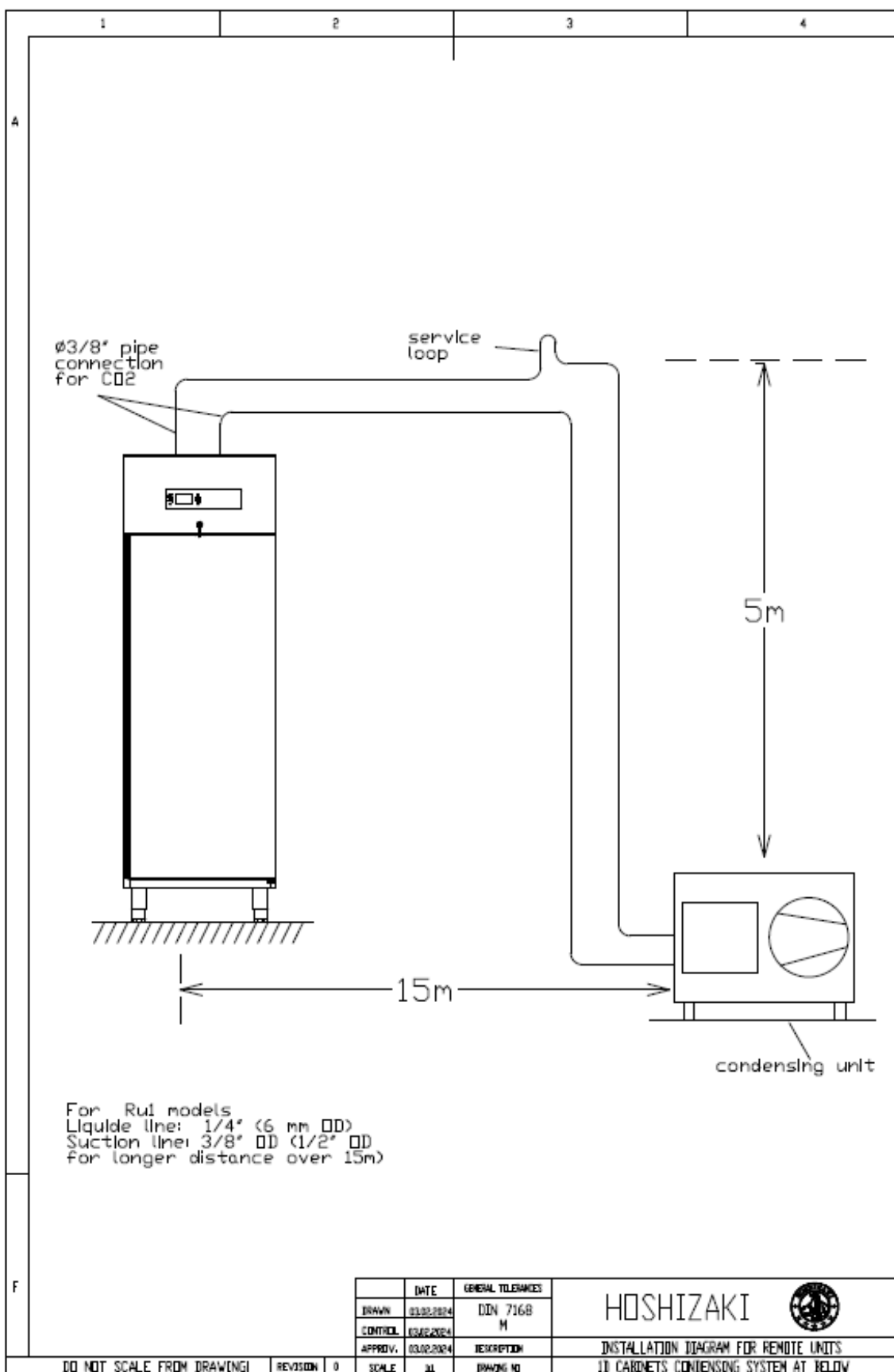
The refrigeration system on the cabinet consists of the following:

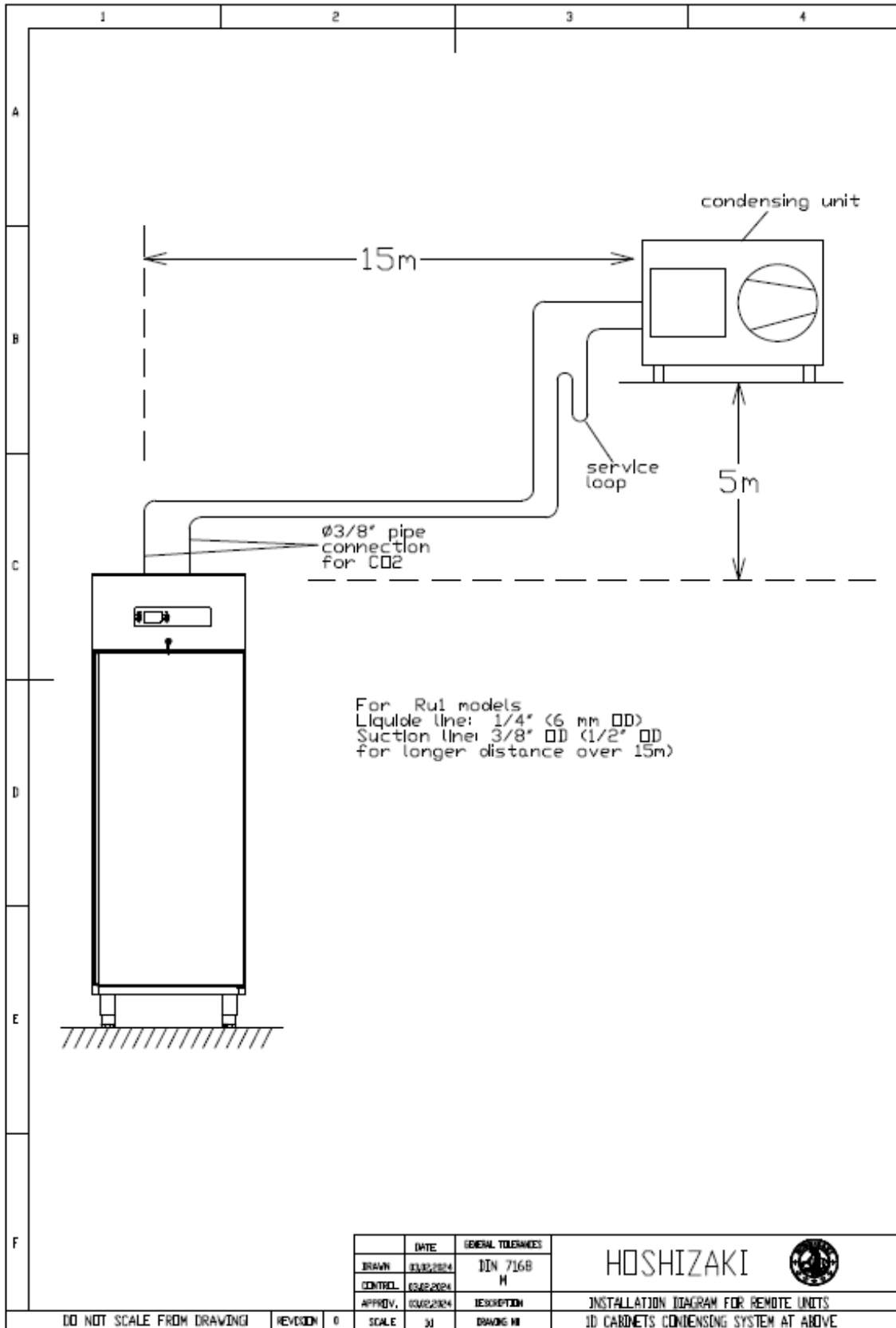
- An evaporator
- A Danfoss AKVP 10-1 electronic expansion valve with coil and the copper pipes used to connect the system.
- 3 temperature sensors Danfoss PT1000 marked according to Danfoss standard room sensor (S3), super-heat sensors (S2) and Evaporator/defrost sensor (S5) are AKS11.  
(RU1 Model include 2 NTC Sensor for Evaporator and Room)

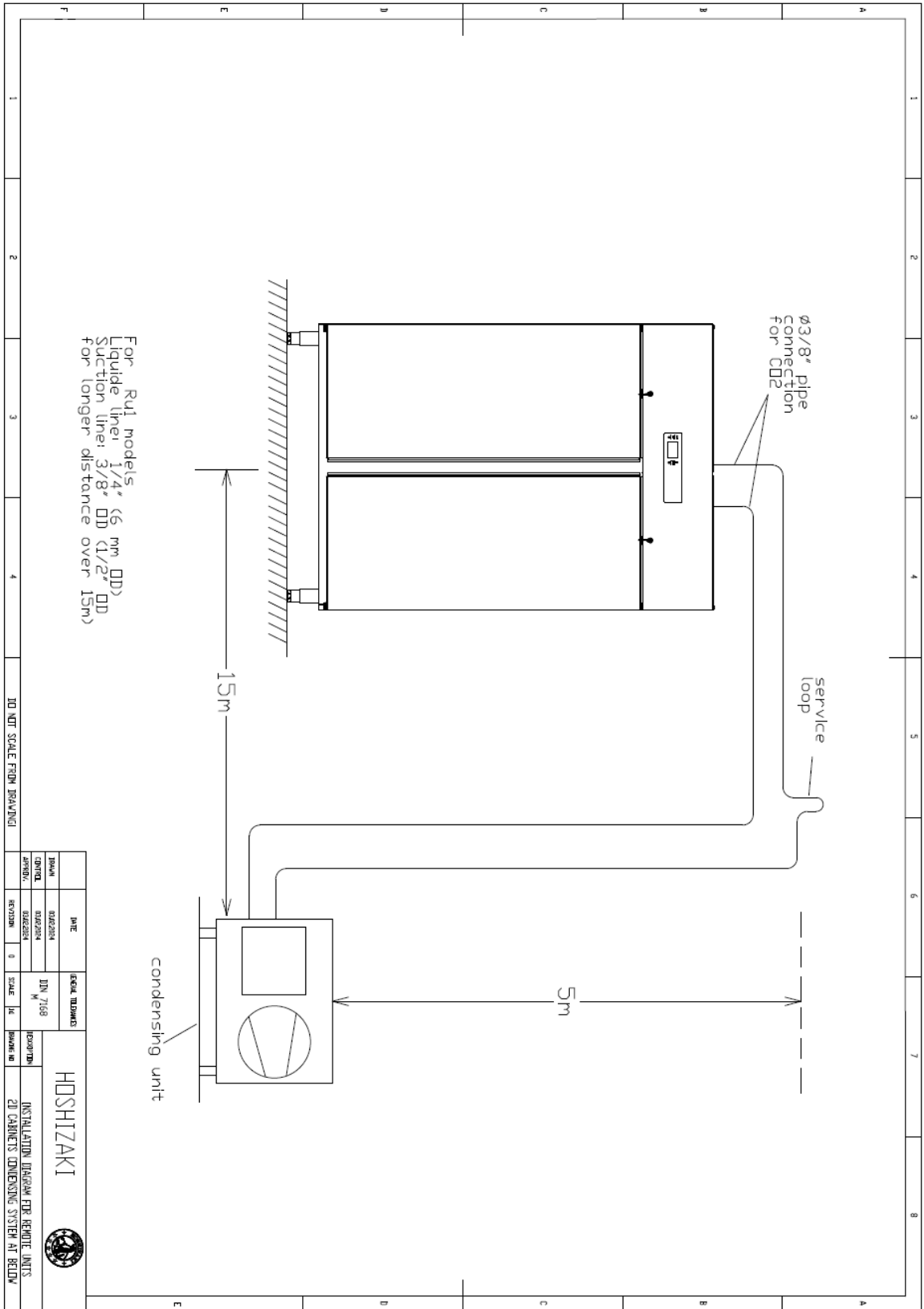
After assembly, the complete system is pressure tested with 90 bar.

All parts are assembled and fitted on the cabinet, so that the installer does not need to access the evaporator compartment, during installation, unless the sensors need to be changed since the controller chosen, is not suitable for PT1000 sensors.











## PARAMETER LISTS

### PARAMETER LIST (RU1)



These cabinet models operate at freezer parameters default. It is recommended to consult the service before operating the cabinet parameters.

		PREMIER K 70	PREMIER M 70	PREMIER F 70
P. CODE	DESCRIPTION	VALUE	VALUE	VALUE
SP	Set point	3	3	-20
CA1	cabinet probe offset	0	0	0
CA2	evaporator probe offset	0	0	0
CA3	Auxillary probe offset	0	0	0
P0	probe type	1	1	1
P1	enable °C decimal point	1	1	1
P2	temperature unit of measurement	0	0	0
P3	Evaporator probe function	1	1	1
P4	configurable input function	1	1	1
P5	value displayed	0	0	0
P7	inlet air weight for calculated product temperature	50	50	50
P8	display refresh time	0	0	0
r0	setpoint differential	3	3	3
r1	minimum setpoint	2	-5	-25
r2	maximum setpoint	12	12	-5
r3	enable setpoint block	0	0	0
r4	setpoint offset in energy saving	0	0	0
r5	cooling or heating operation	0	0	0
r6	setpoint offset in overcooling/overheating	0	0	0
r7	Overcooling/overheating duration	0	0	0
r12	position of the r0 differential	1	1	1
C0	compressor on delay after power-on	0	0	0
C1	delay between 2 compressor switch-ons	5	5	5
C2	compressor off minimum time	3	3	3
C3	compressor on minimum time	0	0	0
C4	compressor off time during cabinet probe alarm	5	5	5
C5	compressor on time during cabinet probe alarm	5	5	5
C6	threshold for high condensation warning	60	60	60
C7	threshold for high condensation alarm	100	100	100
C8	high condensation alarm delay	1	1	1
C10	compressor hours for service	0	0	0
C11	compressor 2 on delay	10	10	10
d00	enable double defrost	0	1	0
d01	temperature for defrost B activation	2	2	2
d0	automatic defrost interval	6	6	6
d0b	automatic defrost interval for B	6	6	6



# HOSHIZAKI EUROPE

<b>d1</b>	defrost type	2	0	0
<b>d1b</b>	defrost type for B	2	2	0
<b>d2</b>	threshold for defrost end	8	8	8
<b>d2b</b>	threshold for defrost end for B	8	8	8
<b>d3</b>	defrost duration	60	60	60
		<b>PREMIER K 70</b>	<b>PREMIER M 70</b>	<b>PREMIER F 70</b>
<b>P. CODE</b>	<b>DESCRIPTION</b>	<b>VALUE</b>	<b>VALUE</b>	<b>VALUE</b>
<b>d3b</b>	defrost duration for B	60	60	60
<b>d4</b>	enable defrost at power-on	0	0	0
<b>d5</b>	defrost delay after power-on	0	0	0
<b>d6</b>	value displayed during defrost	2	2	2
<b>d7</b>	dripping time	3	3	3
<b>d7b</b>	dripping time for B	3	3	3
<b>d8</b>	defrost interval counting mode	0	0	0
<b>d9</b>	evaporation threshold for automatic defrost interval counting	0	0	0
<b>d11</b>	enable defrost timeout alarm	0	0	0
<b>d15</b>	compressor on consecutive time for hot gas defrost	0	0	0
<b>d16</b>	pre-dripping time for hot gas defrost	0	0	0
<b>d18</b>	adaptive defrost interval	999	999	999
<b>d19</b>	threshold for adaptive defrost (relative to optimal evaporation temperature)	3	3	3
<b>d20</b>	compressor on consecutive time for defrost	999	999	999
<b>d21</b>	compressor on consecutive time for defrost after power-on and overcooling	500	500	500
<b>d22</b>	evaporation threshold for adaptive defrost interval counting (relative to optimal evaporation temperature)	-2	-2	-2
<b>d25</b>	enable air out probe for defrost during evaporator probe alarm	0	0	0
<b>d26</b>	defrost interval during evaporator probe alarm	6	6	6
<b>A0</b>	select value for high/low temperature alarms	0	0	0
<b>A1</b>	threshold for low temperature alarm	10	10	10
<b>A2</b>	low temperature alarm type	0	0	0
<b>A4</b>	threshold for high temperature alarm	10	10	10
<b>A5</b>	high temperature alarm type	0	0	0
<b>A6</b>	high temperature alarm delay after power-on	120	120	120
<b>A7</b>	high/low temperature alarms delay	120	120	120
<b>A8</b>	high temperature alarm delay after defrost	120	120	120
<b>A9</b>	high temperature alarm delay after door closing	120	120	120
<b>A10</b>	power failure duration for alarm recording	240	240	240
<b>A11</b>	high/low temperature alarms reset differential	1	1	1
<b>F0</b>	evaporator fan mode during normal operation	1	1	1
<b>F0b</b>	evaporator fan mode during normal operation for B	1	1	1
<b>F1</b>	threshold for evaporator fan operation	8	8	8
<b>F2</b>	evaporator fan mode during defrost and dripping	1	0	0



# HOSHIZAKI EUROPE

<b>F2b</b>	evaporator fan mode during defrost and dripping for B	1	1	0
<b>F3</b>	evaporator fan off maximum time	2	2	2
<b>F3b</b>	evaporator fan off maximum time for B	2	2	2
<b>F4</b>	evaporator fan off time during energy saving	30	30	30
		<b>PREMIER K 70</b>	<b>PREMIER M 70</b>	<b>PREMIER F 70</b>
<b>P. CODE</b>	<b>DESCRIPTION</b>	<b>VALUE</b>	<b>VALUE</b>	<b>VALUE</b>
<b>F5</b>	evaporator fan on time during energy saving	6	6	6
<b>F6</b>	high/low humidity operation	1	1	1
<b>F7</b>	threshold for evaporator fan on after dripping (relative to setpoint)	5	5	5
<b>F8</b>	threshold for evaporator fan operation differential	2	2	2
<b>F9</b>	evaporator fan off delay after compressor off	10	10	10
<b>F10</b>	condenser fan mode	1	1	1
<b>F11</b>	threshold for condenser fan on	15	15	15
<b>F12</b>	condenser fan off delay after compressor off	30	30	30
<b>F17</b>	evaporator fan off time with low humidity	60	60	60
<b>F18</b>	evaporator fan on time with low humidity	10	10	10
<b>i0</b>	door switch input function	5	5	5
<b>i1</b>	door switch input activation	1	1	1
<b>i2</b>	open door alarm delay	2	2	2
<b>i3</b>	regulation inhibition maximum time with door open	10	10	10
<b>i5</b>	multi-purpose input function	8	8	8
<b>i6</b>	multi-purpose input activation	0	0	0
<b>i7</b>	multi-purpose input alarm delay	0	0	0
<b>i8</b>	number of multi-purpose input activations for high pressure alarm	0	0	0
<b>i9</b>	reset counter time for high pressure alarm	240	240	240
<b>i10</b>	door closed consecutive time for energy saving	1	1	1
<b>i13</b>	number of door openings for defrost	0	0	0
<b>i14</b>	door open consecutive time for defrost	0	0	0
<b>u1c</b>	relay K1 configuration	0	0	0
<b>u2c</b>	relay K2 configuration	4	4	4
<b>u3c</b>	relay K3 configuration	2	2	2
<b>u2</b>	enable cabinet light and buttonoperated load in stand-by	0	0	0
<b>u4</b>	enable alarm output off silencing the buzzer	1	1	1
<b>u5</b>	threshold for door heaters on	-1	-1	-1
<b>u6</b>	demisting on duration	5	5	5
<b>u7</b>	neutral zone threshold for heating (relative to setpoint)	-5	-5	-5
<b>U9</b>	enable alarm buzzer	1	1	1
<b>Hr0</b>	enable clock	0	0	0
<b>HE2</b>	energy saving maximum duration	720	720	720
<b>H01</b>	energy saving time	0	0	0
<b>H02</b>	energy saving maximum duration	0	0	0



# HOSHIZAKI EUROPE

<b>POF</b>	Key activation	1	1	1
<b>PAS</b>	Access to password	-19	-19	-19
<b>bLE</b>	serial port configuration for connectivity	0	0	0

		<b>PREMIER K 60</b>	<b>PREMIER M 60</b>	<b>PREMIER F 60</b>
<b>P. CODE</b>	<b>DESCRIPTION</b>	<b>VALUE</b>	<b>VALUE</b>	<b>VALUE</b>
<b>SP</b>	Set point	3	3	-20
<b>CA1</b>	cabinet probe offset	0	0	0
<b>CA2</b>	evaporator probe offset	0	0	0
<b>CA3</b>	Auxillary probe offset	0	0	0
<b>P0</b>	probe type	1	1	1
<b>P1</b>	enable °C decimal point	1	1	1
<b>P2</b>	temperature unit of measurement	0	0	0
<b>P3</b>	Evaporator probe function	1	1	1
<b>P4</b>	configurable input function	1	1	1
<b>P5</b>	value displayed	0	0	0
<b>P7</b>	inlet air weight for calculated product temperature	50	50	50
<b>P8</b>	display refresh time	0	0	0
<b>r0</b>	setpoint differential	3	3	4
<b>r1</b>	minimum setpoint	2	-5	-25
<b>r2</b>	maximum setpoint	12	12	-5
<b>r3</b>	enable setpoint block	0	0	0
<b>r4</b>	setpoint offset in energy saving	0	0	0
<b>r5</b>	cooling or heating operation	0	0	0
<b>r6</b>	setpoint offset in overcooling/overheating	0	0	0
<b>r7</b>	Overcooling/overheating duration	0	0	0
<b>r12</b>	position of the r0 differential	1	1	1
<b>C0</b>	compressor on delay after power-on	0	0	0
<b>C1</b>	delay between 2 compressor switch-ons	5	5	5
<b>C2</b>	compressor off minimum time	3	3	3
<b>C3</b>	compressor on minimum time	0	0	0
<b>C4</b>	compressor off time during cabinet probe alarm	5	5	5
<b>C5</b>	compressor on time during cabinet probe alarm	5	5	5
<b>C6</b>	threshold for high condensation warning	60	60	60
<b>C7</b>	threshold for high condensation alarm	100	100	100
<b>C8</b>	high condensation alarm delay	1	1	1
<b>C10</b>	compressor hours for service	0	0	0
<b>C11</b>	compressor 2 on delay	10	10	10
<b>d00</b>	enable double defrost	0	1	0
<b>d01</b>	temperature for defrost B activation	2	2	2
<b>d0</b>	automatic defrost interval	6	6	6
<b>d0b</b>	automatic defrost interval for B	6	6	6
<b>d1</b>	defrost type	2	0	0
<b>d1b</b>	defrost type for B	2	2	0



# HOSHIZAKI EUROPE

<b>d2</b>	threshold for defrost end	8	8	8
<b>d2b</b>	threshold for defrost end for B	8	8	8
<b>d3</b>	defrost duration	60	60	60
<b>d3b</b>	defrost duration for B	60	60	60
		<b>PREMIER K 60</b>	<b>PREMIER M 60</b>	<b>PREMIER F 60</b>
<b>P. CODE</b>	<b>DESCRIPTION</b>	<b>VALUE</b>	<b>VALUE</b>	<b>VALUE</b>
<b>d4</b>	enable defrost at power-on	0	0	0
<b>d5</b>	defrost delay after power-on	0	0	0
<b>d6</b>	value displayed during defrost	2	2	2
<b>d7</b>	dripping time	3	3	3
<b>d7b</b>	dripping time for B	3	3	3
<b>d8</b>	defrost interval counting mode	0	0	0
<b>d9</b>	evaporation threshold for automatic defrost interval counting	0	0	0
<b>d11</b>	enable defrost timeout alarm	0	0	0
<b>d15</b>	compressor on consecutive time for hot gas defrost	0	0	0
<b>d16</b>	pre-dripping time for hot gas defrost	0	0	0
<b>d18</b>	adaptive defrost interval	999	999	999
<b>d19</b>	threshold for adaptive defrost (relative to optimal evaporation temperature)	3	3	3
<b>d20</b>	compressor on consecutive time for defrost	999	999	999
<b>d21</b>	compressor on consecutive time for defrost after power-on and overcooling	500	500	500
<b>d22</b>	evaporation threshold for adaptive defrost interval counting (relative to optimal evaporation temperature)	-2	-2	-2
<b>d25</b>	enable air out probe for defrost during evaporator probe alarm	0	0	0
<b>d26</b>	defrost interval during evaporator probe alarm	6	6	6
<b>A0</b>	select value for high/low temperature alarms	0	0	0
<b>A1</b>	threshold for low temperature alarm	10	10	10
<b>A2</b>	low temperature alarm type	0	0	0
<b>A4</b>	threshold for high temperature alarm	10	10	10
<b>A5</b>	high temperature alarm type	0	0	0
<b>A6</b>	high temperature alarm delay after power-on	120	120	120
<b>A7</b>	high/low temperature alarms delay	120	120	120
<b>A8</b>	high temperature alarm delay after defrost	120	120	120
<b>A9</b>	high temperature alarm delay after door closing	120	120	120
<b>A10</b>	power failure duration for alarm recording	240	240	240
<b>A11</b>	high/low temperature alarms reset differential	1	1	1
<b>F0</b>	evaporator fan mode during normal operation	1	1	1
<b>F0b</b>	evaporator fan mode during normal operation for B	1	1	1
<b>F1</b>	threshold for evaporator fan operation	8	8	8
<b>F2</b>	evaporator fan mode during defrost and dripping	1	0	0



# HOSHIZAKI EUROPE

<b>F2b</b>	evaporator fan mode during defrost and dripping	1	1	0
<b>F3</b>	evaporator fan off maximum time for B	2	2	2
<b>F3b</b>	evaporator fan off maximum time for B	2	2	2
<b>F4</b>	evaporator fan off time during energy saving	30	30	30
		<b>PREMIER K 60</b>	<b>PREMIER M 60</b>	<b>PREMIER F 60</b>
<b>P. CODE</b>	<b>DESCRIPTION</b>	<b>VALUE</b>	<b>VALUE</b>	<b>VALUE</b>
<b>F5</b>	evaporator fan on time during energy saving	6	6	6
<b>F6</b>	high/low humidity operation	1	1	1
<b>F7</b>	threshold for evaporator fan on after dripping (relative to setpoint)	5	5	5
<b>F8</b>	threshold for evaporator fan operation differential	2	2	2
<b>F9</b>	evaporator fan off delay after compressor off	10	10	10
<b>F10</b>	condenser fan mode	1	1	1
<b>F11</b>	threshold for condenser fan on	15	15	15
<b>F12</b>	condenser fan off delay after compressor off	30	30	30
<b>F17</b>	evaporator fan off time with low humidity	60	60	60
<b>F18</b>	evaporator fan on time with low humidity	10	10	10
<b>i0</b>	door switch input function	5	5	5
<b>i1</b>	door switch input activation	1	1	1
<b>i2</b>	open door alarm delay	2	2	2
<b>i3</b>	regulation inhibition maximum time with door open	10	10	10
<b>i5</b>	multi-purpose input function	8	8	8
<b>i6</b>	multi-purpose input activation	0	0	0
<b>i7</b>	multi-purpose input alarm delay	0	0	0
<b>i8</b>	number of multi-purpose input activations for high pressure alarm	0	0	0
<b>i9</b>	reset counter time for high pressure alarm	240	240	240
<b>i10</b>	door closed consecutive time for energy saving	1	1	1
<b>i13</b>	number of door openings for defrost	0	0	0
<b>i14</b>	door open consecutive time for defrost	0	0	0
<b>u1c</b>	relay K1 configuration	0	0	0
<b>u2c</b>	relay K2 configuration	4	4	4
<b>u3c</b>	relay K3 configuration	2	2	2
<b>u2</b>	enable cabinet light and buttonoperated load in stand-by	0	0	0
<b>u4</b>	enable alarm output off silencing the buzzer	1	1	1
<b>u5</b>	threshold for door heaters on	-1	-1	-1
<b>u6</b>	demisting on duration	5	5	5
<b>u7</b>	neutral zone threshold for heating (relative to setpoint)	-5	-5	-5
<b>U9</b>	enable alarm buzzer	1	1	1
<b>Hr0</b>	enable clock	0	0	0
<b>HE2</b>	energy saving maximum duration	720	720	720
<b>H01</b>	energy saving time	0	0	0
<b>H02</b>	energy saving maximum duration	0	0	0



# HOSHIZAKI EUROPE

<b>POF</b>	Key activation	1	1	1
<b>PAS</b>	Access to password	-19	-19	-19
<b>ble</b>	serial port configuration for connectivity	0	0	0

		<b>PREMIER K W80</b>	<b>PREMIER M W80</b>	<b>PREMIER F W80</b>
<b>P. CODE</b>	<b>DESCRIPTION</b>	<b>VALUE</b>	<b>VALUE</b>	<b>VALUE</b>
<b>SP</b>	Set point	3	3	-20
<b>CA1</b>	cabinet probe offset	0	0	0
<b>CA2</b>	evaporator probe offset	0	0	0
<b>CA3</b>	Auxillary probe offset	0	0	0
<b>P0</b>	probe type	1	1	1
<b>P1</b>	enable °C decimal point	1	1	1
<b>P2</b>	temperature unit of measurement	0	0	0
<b>P3</b>	Evaporator probe function	1	1	1
<b>P4</b>	configurable input function	1	1	1
<b>P5</b>	value displayed	0	0	0
<b>P7</b>	inlet air weight for calculated product temperature	50	50	50
<b>P8</b>	display refresh time	0	0	0
<b>r0</b>	setpoint differential	3	3	3
<b>r1</b>	minimum setpoint	2	-5	-25
<b>r2</b>	maximum setpoint	12	12	-5
<b>r3</b>	enable setpoint block	0	0	0
<b>r4</b>	setpoint offset in energy saving	0	0	0
<b>r5</b>	cooling or heating operation	0	0	0
<b>r6</b>	setpoint offset in overcooling/overheating	0	0	0
<b>r7</b>	Overcooling/overheating duration	0	0	0
<b>r12</b>	position of the r0 differential	1	1	1
<b>C0</b>	compressor on delay after power-on	0	0	0
<b>C1</b>	delay between 2 compressor switch-ons	5	5	5
<b>C2</b>	compressor off minimum time	3	3	3
<b>C3</b>	compressor on minimum time	0	0	0
<b>C4</b>	compressor off time during cabinet probe alarm	5	5	5
<b>C5</b>	compressor on time during cabinet probe alarm	5	5	5
<b>C6</b>	threshold for high condensation warning	60	60	60
<b>C7</b>	threshold for high condensation alarm	65	65	100
<b>C8</b>	high condensation alarm delay	1	1	1
<b>C10</b>	compressor hours for service	0	0	0
<b>C11</b>	compressor 2 on delay	10	10	10
<b>d00</b>	enable double defrost	0	1	0
<b>d01</b>	temperature for defrost B activation	2	2	2
<b>d0</b>	automatic defrost interval	6	6	6
<b>d0b</b>	automatic defrost interval for B	6	6	6
<b>d1</b>	defrost type	2	0	0
<b>d1b</b>	defrost type for B	2	2	0



# HOSHIZAKI EUROPE

<b>d2</b>	threshold for defrost end	8	8	8
<b>d2b</b>	threshold for defrost end for B	8	8	8
<b>d3</b>	defrost duration	60	60	60
<b>d3b</b>	defrost duration for B	60	60	60
		<b>PREMIER K W80</b>	<b>PREMIER M W80</b>	<b>PREMIER F W80</b>
<b>P. CODE</b>	<b>DESCRIPTION</b>	<b>VALUE</b>	<b>VALUE</b>	<b>VALUE</b>
<b>d4</b>	enable defrost at power-on	0	0	0
<b>d5</b>	defrost delay after power-on	0	0	0
<b>d6</b>	value displayed during defrost	2	2	2
<b>d7</b>	dripping time	3	3	3
<b>d7b</b>	dripping time for B	3	3	3
<b>d8</b>	defrost interval counting mode	0	0	0
<b>d9</b>	evaporation threshold for automatic defrost interval counting	0	0	0
<b>d11</b>	enable defrost timeout alarm	0	0	0
<b>d15</b>	compressor on consecutive time for hot gas defrost	0	0	0
<b>d16</b>	pre-dripping time for hot gas defrost	0	0	0
<b>d18</b>	adaptive defrost interval	999	999	999
<b>d19</b>	threshold for adaptive defrost (relative to optimal evaporation temperature)	3	3	3
<b>d20</b>	compressor on consecutive time for defrost	999	999	999
<b>d21</b>	compressor on consecutive time for defrost after power-on and overcooling	500	500	500
<b>d22</b>	evaporation threshold for adaptive defrost interval counting (relative to optimal evaporation temperature)	-2.0	-2.0	-2.0
<b>d25</b>	enable air out probe for defrost during evaporator probe alarm	0	0	0
<b>d26</b>	defrost interval during evaporator probe alarm	6	6	6
<b>A0</b>	select value for high/low temperature alarms	0	0	0
<b>A1</b>	threshold for low temperature alarm	10	10	10
<b>A2</b>	low temperature alarm type	0	0	0
<b>A4</b>	threshold for high temperature alarm	10	10	10
<b>A5</b>	high temperature alarm type	0	0	0
<b>A6</b>	high temperature alarm delay after power-on	120	120	120
<b>A7</b>	high/low temperature alarms delay	120	120	120
<b>A8</b>	high temperature alarm delay after defrost	120	120	120
<b>A9</b>	high temperature alarm delay after door closing	120	120	120
<b>A10</b>	power failure duration for alarm recording	240	240	240
<b>A11</b>	high/low temperature alarms reset differential	1	1	1
<b>F0</b>	evaporator fan mode during normal operation	1	1	1
<b>F0b</b>	evaporator fan mode during normal operation for B	1	1	1
<b>F1</b>	threshold for evaporator fan operation	8	8	8
<b>F2</b>	evaporator fan mode during defrost and dripping	1	0	0
<b>F2b</b>	evaporator fan mode during defrost and dripping for B	1	1	0



# HOSHIZAKI EUROPE

<b>F3</b>	evaporator fan off maximum time	2	2	2
<b>F3b</b>	evaporator fan off maximum time for B	2	2	2
<b>F4</b>	evaporator fan off time during energy saving	30	30	30
<b>F5</b>	evaporator fan on time during energy saving	6	6	6
		<b>PREMIER K W80</b>	<b>PREMIER M W80</b>	<b>PREMIER F W80</b>
<b>P. CODE</b>	<b>DESCRIPTION</b>	<b>VALUE</b>	<b>VALUE</b>	<b>VALUE</b>
<b>F6</b>	high/low humidity operation	1	1	1
<b>F7</b>	threshold for evaporator fan on after dripping (relative to setpoint)	5.0	5.0	5.0
<b>F8</b>	threshold for evaporator fan operation differential	2	2	2
<b>F9</b>	evaporator fan off delay after compressor off	10	10	10
<b>F10</b>	condenser fan mode	1	1	1
<b>F11</b>	threshold for condenser fan on	15	15	15
<b>F12</b>	condenser fan off delay after compressor off	30	30	30
<b>F17</b>	evaporator fan off time with low humidity	60	60	60
<b>F18</b>	evaporator fan on time with low humidity	10	10	10
<b>i0</b>	door switch input function	5	5	5
<b>i1</b>	door switch input activation	1	1	1
<b>i2</b>	open door alarm delay	2	2	2
<b>i3</b>	regulation inhibition maximum time with door open	10	10	10
<b>i5</b>	multi-purpose input function	8	8	8
<b>i6</b>	multi-purpose input activation	0	0	0
<b>i7</b>	multi-purpose input alarm delay	0	0	0
<b>i8</b>	number of multi-purpose input activations for high pressure alarm	0	0	0
<b>i9</b>	reset counter time for high pressure alarm	240	240	240
<b>i10</b>	door closed consecutive time for energy saving	1	1	1
<b>i13</b>	number of door openings for defrost	0	0	0
<b>i14</b>	door open consecutive time for defrost	0	0	0
<b>u1c</b>	relay K1 configuration	0	0	0
<b>u2c</b>	relay K2 configuration	4	4	4
<b>u3c</b>	relay K3 configuration	2	2	2
<b>u2</b>	enable cabinet light and buttonoperated load in stand-by	0	0	0
<b>u4</b>	enable alarm output off silencing the buzzer	1	1	1
<b>u5</b>	threshold for door heaters on	-1.0	-1.0	-1.0
<b>u6</b>	demisting on duration	5	5	5
<b>u7</b>	neutral zone threshold for heating (relative to setpoint)	-5.0	-5.0	-5.0
<b>U9</b>	enable alarm buzzer	1	1	1
<b>Hr0</b>	enable clock	0	0	0
<b>HE2</b>	energy saving maximum duration	720	720	720
<b>H01</b>	energy saving time	0	0	0
<b>H02</b>	energy saving maximum duration	0	0	0
<b>POF</b>	Key activation	1	1	1



# HOSHIZAKI EUROPE

<b>PAS</b>	Access to password	-19	-19	-19
<b>BLE</b>	serial port configuration for connectivity	0	0	0

		<b>PREMIER K 140</b>	<b>PREMIER M 140</b>	<b>PREMIER F 140</b>
<b>P. CODE</b>	<b>DESCRIPTION</b>	<b>VALUE</b>	<b>VALUE</b>	<b>VALUE</b>
<b>SP</b>	Set point	3	3	-20
<b>CA1</b>	cabinet probe offset	0	0	0
<b>CA2</b>	evaporator probe offset	0	0	0
<b>CA3</b>	Auxillary probe offset	0	0	0
<b>P0</b>	probe type	1	1	1
<b>P1</b>	enable °C decimal point	1	1	1
<b>P2</b>	temperature unit of measurement	0	0	0
<b>P3</b>	Evaporator probe function	1	1	1
<b>P4</b>	configurable input function	1	1	1
<b>P5</b>	value displayed	0	0	0
<b>P7</b>	inlet air weight for calculated product temperature	50	50	50
<b>P8</b>	display refresh time	0	0	0
<b>r0</b>	setpoint differential	3.0	3.0	3.0
<b>r1</b>	minimum setpoint	2	-5	-25
<b>r2</b>	maximum setpoint	12	12	-5
<b>r3</b>	enable setpoint block	0	0	0
<b>r4</b>	setpoint offset in energy saving	0	0	0
<b>r5</b>	cooling or heating operation	0	0	0
<b>r6</b>	setpoint offset in overcooling/overheating	0	0	0
<b>r7</b>	Overcooling/overheating duration	0	0	0
<b>r12</b>	position of the r0 differential	1	1	1
<b>C0</b>	compressor on delay after power-on	0	0	0
<b>C1</b>	delay between 2 compressor switch-ons	5	5	5
<b>C2</b>	compressor off minimum time	3	3	3
<b>C3</b>	compressor on minimum time	0	0	0
<b>C4</b>	compressor off time during cabinet probe alarm	5	5	5
<b>C5</b>	compressor on time during cabinet probe alarm	5	5	5
<b>C6</b>	threshold for high condensation warning	60	60	60
<b>C7</b>	threshold for high condensation alarm	100	100	100
<b>C8</b>	high condensation alarm delay	1	1	1
<b>C10</b>	compressor hours for service	0	0	0
<b>C11</b>	compressor 2 on delay	10	10	10
<b>d00</b>	enable double defrost	1	1	0
<b>d01</b>	temperature for defrost B activation	2	2	2
<b>d0</b>	automatic defrost interval	6	6	6
<b>d0b</b>	automatic defrost interval for B	4	4	6
<b>d1</b>	defrost type	2	0	0



# HOSHIZAKI EUROPE

<b>d1b</b>	defrost type for B	2	2	0
<b>d2</b>	threshold for defrost end	8	8	8
<b>d2b</b>	threshold for defrost end for B	4	4	8
		<b>PREMIER K 140</b>	<b>PREMIER M 140</b>	<b>PREMIER F 140</b>
<b>P. CODE</b>	<b>DESCRIPTION</b>	<b>VALUE</b>	<b>VALUE</b>	<b>VALUE</b>
<b>d3</b>	defrost duration	60	60	60
<b>d3b</b>	defrost duration for B	85	85	60
<b>d4</b>	enable defrost at power-on	0	0	0
<b>d5</b>	defrost delay after power-on	0	0	0
<b>d6</b>	value displayed during defrost	2	2	2
<b>d7</b>	dripping time	3	3	3
<b>d7b</b>	dripping time for B	3	3	3
<b>d8</b>	defrost interval counting mode	0	0	0
<b>d9</b>	evaporation threshold for automatic defrost interval counting	0	0	0
<b>d11</b>	enable defrost timeout alarm	0	0	0
<b>d15</b>	compressor on consecutive time for hot gas defrost	0	0	0
<b>d16</b>	pre-dripping time for hot gas defrost	0	0	0
<b>d18</b>	adaptive defrost interval	999	999	999
<b>d19</b>	threshold for adaptive defrost (relative to optimal evaporation temperature)	3	3	3
<b>d20</b>	compressor on consecutive time for defrost	999	999	999
<b>d21</b>	compressor on consecutive time for defrost after power-on and overcooling	500	500	500
<b>d22</b>	evaporation threshold for adaptive defrost interval counting (relative to optimal evaporation temperature)	-2.0	-2.0	-2.0
<b>d25</b>	enable air out probe for defrost during evaporator probe alarm	0	0	0
<b>d26</b>	defrost interval during evaporator probe alarm	6	6	6
<b>A0</b>	select value for high/low temperature alarms	0	0	0
<b>A1</b>	threshold for low temperature alarm	10	10	10
<b>A2</b>	low temperature alarm type	0	0	0
<b>A4</b>	threshold for high temperature alarm	10	10	10
<b>A5</b>	high temperature alarm type	0	0	0
<b>A6</b>	high temperature alarm delay after power-on	120	120	120
<b>A7</b>	high/low temperature alarms delay	120	120	120
<b>A8</b>	high temperature alarm delay after defrost	120	120	120
<b>A9</b>	high temperature alarm delay after door closing	120	120	120
<b>A10</b>	power failure duration for alarm recording	240	240	240
<b>A11</b>	high/low temperature alarms reset differential	1	1	1
<b>F0</b>	evaporator fan mode during normal operation	1	1	1
<b>F0b</b>	evaporator fan mode during normal operation for B	1	1	1
<b>F1</b>	threshold for evaporator fan operation	8	8	8
<b>F2</b>	evaporator fan mode during defrost and dripping	1	0	0



# HOSHIZAKI EUROPE

<b>F2b</b>	evaporator fan mode during defrost and dripping for B	1	1	0
<b>F3</b>	evaporator fan off maximum time	2	2	2
		<b>PREMIER K 140</b>	<b>PREMIER M 140</b>	<b>PREMIER F 140</b>
<b>P. CODE</b>	<b>DESCRIPTION</b>	<b>VALUE</b>	<b>VALUE</b>	<b>VALUE</b>
<b>F3b</b>	evaporator fan off maximum time for B	2	2	2
<b>F4</b>	evaporator fan off time during energy saving	18	18	30
<b>F5</b>	evaporator fan on time during energy saving	18	18	6
<b>F6</b>	high/low humidity operation	1	1	1
<b>F7</b>	threshold for evaporator fan on after dripping (relative to setpoint)	5.0	5.0	5.0
<b>F8</b>	threshold for evaporator fan operation differential	2	2	2
<b>F9</b>	evaporator fan off delay after compressor off	10	10	10
<b>F10</b>	condenser fan mode	1	1	1
<b>F11</b>	threshold for condenser fan on	15	15	15
<b>F12</b>	condenser fan off delay after compressor off	30	30	30
<b>F17</b>	evaporator fan off time with low humidity	60	60	60
<b>F18</b>	evaporator fan on time with low humidity	10	10	10
<b>i0</b>	door switch input function	5	5	5
<b>i1</b>	door switch input activation	1	1	1
<b>i2</b>	open door alarm delay	2	2	2
<b>i3</b>	regulation inhibition maximum time with door open	10	10	10
<b>i5</b>	multi-purpose input function	8	8	8
<b>i6</b>	multi-purpose input activation	0	0	0
<b>i7</b>	multi-purpose input alarm delay	0	0	0
<b>i8</b>	number of multi-purpose input activations for high pressure alarm	0	0	0
<b>i9</b>	reset counter time for high pressure alarm	240	240	240
<b>i10</b>	door closed consecutive time for energy saving	1	1	1
<b>i13</b>	number of door openings for defrost	0	0	0
<b>i14</b>	door open consecutive time for defrost	0	0	0
<b>u1c</b>	relay K1 configuration	0	0	0
<b>u2c</b>	relay K2 configuration	4	4	4
<b>u3c</b>	relay K3 configuration	2	2	2
<b>u2</b>	enable cabinet light and buttonoperated load in stand-by	0	0	0
<b>u4</b>	enable alarm output off silencing the buzzer	1	1	1
<b>u5</b>	threshold for door heaters on	-1.0	-1.0	-1.0
<b>u6</b>	demisting on duration	5	5	5
<b>u7</b>	neutral zone threshold for heating (relative to setpoint)	-5.0	-5.0	-5.0
<b>U9</b>	enable alarm buzzer	1	1	1
<b>Hr0</b>	enable clock	0	0	0
<b>HE2</b>	energy saving maximum duration	720	720	720
<b>H01</b>	energy saving time	0	0	0
<b>H02</b>	energy saving maximum duration	0	0	0



# HOSHIZAKI EUROPE

<b>POF</b>	Key activation	1	1	1
<b>PAS</b>	Access to password	-19	-19	-19
<b>Ble</b>	serial port configuration for connectivity	0	0	0

		<b>BAKER M 950</b>	<b>BAKER F 950</b>
<b>P. CODE</b>	<b>DESCRIPTION</b>	<b>VALUE</b>	<b>VALUE</b>
<b>SP</b>	Set point	+3	-20
<b>CA1</b>	cabinet probe offset	0	0
<b>CA2</b>	evaporator probe offset	0	0
<b>CA3</b>	Auxillary probe offset	0	0
<b>P0</b>	probe type	1	1
<b>P1</b>	enable °C decimal point	1	1
<b>P2</b>	temperature unit of measurement	0	0
<b>P3</b>	Evaporator probe function	1	1
<b>P4</b>	configurable input function	1	1
<b>P5</b>	value displayed	0	0
<b>P7</b>	inlet air weight for calculated product temperature	50	50
<b>P8</b>	display refresh time	0	0
<b>r0</b>	setpoint differential	1	3
<b>r1</b>	minimum setpoint	-5	-25
<b>r2</b>	maximum setpoint	12	-5
<b>r3</b>	enable setpoint block	0	0
<b>r4</b>	setpoint offset in energy saving	0	0
<b>r5</b>	cooling or heating operation	0	0
<b>r6</b>	setpoint offset in overcooling/overheating	0	0
<b>r7</b>	Overcooling/overheating duration	0	0
<b>r12</b>	position of the r0 differential	1	1
<b>C0</b>	compressor on delay after power-on	0	0
<b>C1</b>	delay between 2 compressor switch-ons	5	5
<b>C2</b>	compressor off minimum time	3	3
<b>C3</b>	compressor on minimum time	0	0
<b>C4</b>	compressor off time during cabinet probe alarm	5	5
<b>C5</b>	compressor on time during cabinet probe alarm	5	5
<b>C6</b>	threshold for high condensation warning	60	60
<b>C7</b>	threshold for high condensation alarm	100	100
<b>C8</b>	high condensation alarm delay	1	1
<b>C10</b>	compressor hours for service	0	0
<b>C11</b>	compressor 2 on delay	10	10
<b>d00</b>	enable double defrost	0	0
<b>d01</b>	temperature for defrost B activation	2	2
<b>d0</b>	automatic defrost interval	6	6
<b>d0b</b>	automatic defrost interval for B	6	6
<b>d1</b>	defrost type	0	0
<b>d1b</b>	defrost type for B	0	0
<b>d2</b>	threshold for defrost end	8	8
<b>d2b</b>	threshold for defrost end for B	8	8



# HOSHIZAKI EUROPE

		BAKER M 950	BAKER F 950
P. CODE	DESCRIPTION	VALUE	VALUE
d3	defrost duration	60	60
d3b	defrost duration for B	60	60
d4	enable defrost at power-on	0	0
d5	defrost delay after power-on	0	0
d6	value displayed during defrost	2	2
d7	dripping time	3	3
d7b	dripping time for B	3	3
d8	defrost interval counting mode	0	0
d9	evaporation threshold for automatic defrost interval counting	0	0
d11	enable defrost timeout alarm	0	0
d15	compressor on consecutive time for hot gas defrost	0	0
d16	pre-dripping time for hot gas defrost	0	0
d18	adaptive defrost interval	999	999
d19	threshold for adaptive defrost (relative to optimal evaporation temperature)	3	3
d20	compressor on consecutive time for defrost	999	999
d21	compressor on consecutive time for defrost after power-on and overcooling	500	500
d22	evaporation threshold for adaptive defrost interval counting (relative to optimal evaporation temperature)	-2	-2
d25	enable air out probe for defrost during evaporator probe alarm	0	0
d26	defrost interval during evaporator probe alarm	6	6
A0	select value for high/low temperature alarms	0	0
A1	threshold for low temperature alarm	10	10
A2	low temperature alarm type	0	0
A4	threshold for high temperature alarm	10	10
A5	high temperature alarm type	0	0
A6	high temperature alarm delay after power-on	120	120
A7	high/low temperature alarms delay	120	120
A8	high temperature alarm delay after defrost	120	120
A9	high temperature alarm delay after door closing	120	120
A10	power failure duration for alarm recording	240	240
A11	high/low temperature alarms reset differential	1	1
F0	evaporator fan mode during normal operation	5	1
F0b	evaporator fan mode during normal operation for B	5	1
F1	threshold for evaporator fan operation	8	8
F2	evaporator fan mode during defrost and dripping	0	0
F2b	evaporator fan mode during defrost and dripping for B	0	0
F3	evaporator fan off maximum time	2	2
F3b	evaporator fan off maximum time for B	2	2
F4	evaporator fan off time during energy saving	30	30



# HOSHIZAKI EUROPE

		BAKER M 950	BAKER F 950
P. CODE	DESCRIPTION	VALUE	VALUE
F5	evaporator fan on time during energy saving	6	6
F6	high/low humidity operation	1	1
F7	threshold for evaporator fan on after dripping (relative to setpoint)	5	5
F8	threshold for evaporator fan operation differential	2	2
F9	evaporator fan off delay after compressor off	10	10
F10	condenser fan mode	1	1
F11	threshold for condenser fan on	15	15
F12	condenser fan off delay after compressor off	30	30
F17	evaporator fan off time with low humidity	240	60
F18	evaporator fan on time with low humidity	5	10
i0	door switch input function	5	5
i1	door switch input activation	1	1
i2	open door alarm delay	2	2
i3	regulation inhibition maximum time with door open	10	10
i5	multi-purpose input function	8	8
i6	multi-purpose input activation	0	0
i7	multi-purpose input alarm delay	0	0
i8	number of multi-purpose input activations for high pressure alarm	0	0
i9	reset counter time for high pressure alarm	240	240
i10	door closed consecutive time for energy saving	0	1
i13	number of door openings for defrost	0	0
i14	door open consecutive time for defrost	0	0
u1c	relay K1 configuration	0	0
u2c	relay K2 configuration	4	4
u3c	relay K3 configuration	2	2
u2	enable cabinet light and buttonoperated load in stand-by	0	0
u4	enable alarm output off silencing the buzzer	1	1
u5	threshold for door heaters on	-1	-1
u6	demisting on duration	5	5
u7	neutral zone threshold for heating (relative to setpoint)	-5	-5
U9	enable alarm buzzer	1	1
Hr0	enable clock	0	0
HE2	energy saving maximum duration	720	720
H01	energy saving time	0	0
H02	energy saving maximum duration	0	0
POF	Key activation	1	1
PAS	Access to password	-19	-19
bLE	serial port configuration for connectivity	0	0



## PARAMETER LIST (GA 950)

Item	<u>COOLING</u>	Min	Max	Def	Dim.	Lev	Note
<b>C01</b>	Minimum compressor on time	0	60	<b>2</b>	min	serv	
<b>C02</b>	Minimum compressor off time	0	60	<b>5</b>	min	serv	
<b>C03</b>	Compressor ON->OFF differential -FREEZE, STORAGE, RETARD-	0,0	10,0	<b>2,0</b>	°K	serv	Troom <= SP - C03 ==> compressor OFF
<b>C04</b>	Compressor OFF->ON differential - FREEZE, STORAGE, RETARD-	0,0	10,0	<b>2,0</b>	°K	serv	Troom >= SP + C04 ==> compressor ON
<b>C05</b>	Diff. between room set point and evaporator temp. to allow compressor cut in	0,0	30,0	<b>5,0</b>	°K	serv	Tevap <= SP - C05 ==> compressorcut in not allowed
<b>C06</b>	Compressor run when Troom is faulty - FREEZE-	0	30	<b>10</b>	min	serv	C06=0 ==> compressor alwaysOFF; C07=0 and C06>0 ==> compressor always ON; C06=4, C07=6: the compressor willcycle 4 minutes ON and 6 minutes OFF;
<b>C07</b>	Compressor stop when Troom is faulty - FREEZE-	0	30	<b>2</b>	min	serv	
<b>C08</b>	Compressor run when Troom is faulty - STORAGE, RETARD-	0	30	<b>5</b>	min	serv	
<b>C09</b>	Compressor stop when Troom is faulty - STORAGE, RETARD-	0	30	<b>5</b>	min	serv	
Item	<u>COOLING / HEATING-</u>	Min	Max	Def	Dim.	Lev	Note
<b>CH01</b>	Compressor OFF->ON differential	0,0	10,0	<b>4,0</b>	°K	serv	T room >= SP + CH01 ==> compressor ON; T room <= SP ==> compressor OFF
<b>CH02</b>	Heater control mode	ON-OFF	PID	ON-OFF		serv	
<b>CH03</b>	Heater OFF->ON differential	0,0	10,0	<b>1,0</b>	°K	serv	T room <= SP - CH02 ==> heater ON; T room >= SP ==> heater OFF
<b>CH04</b>	Proportional band	1,0	30,0	<b>5,0</b>	°C	serv	
<b>CH05</b>	Integrative time	0	600	<b>100</b>	s	serv	
<b>CH06</b>	Derivative time	0	600	<b>200</b>	s	serv	
<b>CH07</b>	Antireset	0	100	<b>80</b>	%	serv	
<b>CH08</b>	Cycle time	1	300	<b>10</b>	s	serv	Tevap >= SP + CH07 ==> heater cutin not allowed
<b>CH09</b>	Minimum time between heater off and compressor on	0	20	<b>2</b>	min	serv	
<b>CH10</b>	Minimum time between compressor offand heater on	0	20	<b>2</b>	min	serv	
<b>CH11</b>	Diff. between room set point and evaporator temp. to allow heater cut in	0,0	30,0	<b>7,0</b>	°K	serv	Tevap >= SP + CH07 ==> heater cutin not allowed
<b>CH12</b>	Allow the use of the defrost heater as additional cabinet heater	NO	YES	<b>YES</b>		serv	



# HOSHIZAKI EUROPE

Item	<u>EVAPORATOR FAN</u>	Min	Max	Def	Dim.	Lev	Note
<b>F01</b>	Evaporator fan speed, compressor, heater and steamer OFF -FREEZE-	5	100	<b>100</b>	%	serv	
<b>F02</b>	Evaporator fan speed, compressor, heater and steamer OFF -STORAGE-	5	100	<b>50</b>	%	serv	
<b>F03</b>	Evaporator fan speed, compressor, heater and steamer OFF -THAW-	5	100	<b>50</b>	%	serv	
<b>F04</b>	Evaporator fan speed, compressor, heater and steamer OFF -PROVE-	5	100	<b>30</b>	%	serv	
<b>F05</b>	Evaporator fan speed, compressor, heater and steamer OFF -RETARD-	5	100	<b>50</b>	%	serv	
Item	<u>DEFROST -STORAGE-</u>	Min	Max	Def	Dim.	Lev	Note
<b>D01</b>	Defrost enable	NO	YES	<b>YES</b>		serv	
<b>D02</b>	Defrost start mode in storage	TIMED, REAL TIME		REAL TIME		serv	
<b>D03</b>	Time interval among defrosts	0	24	<b>6</b>	hrs	user	
<b>D04</b>	Scheduled time for defrost 1	0	23:59	--:--		user	
<b>D05</b>	Scheduled time for defrost 2	0	23:59	--:--		user	
<b>D06</b>	Scheduled time for defrost 3	0	23:59	--:--		user	
<b>D07</b>	Scheduled time for defrost 4	0	23:59	--:--		user	
<b>D08</b>	Defrost end temperature	5,0	25,0	<b>15,0</b>	°C	serv	
<b>D09</b>	Maximum duration of defrost	1	100	<b>45</b>	min	serv	
<b>D10</b>	Defrost type	OFF, ELECTRIC, HOT GAS		ELECTRIC		serv	
<b>D11</b>	Dripping time	0	10	<b>2</b>	min	serv	
<b>D12</b>	Fan in defrost	NO	YES	<b>NO</b>		serv	
<b>D13</b>	Evaporator fan speed in defrost	20	100	<b>50</b>	%	serv	
<b>D14</b>	Evaporator fan re-start temperature after defrost	-10,0	10,0	<b>0</b>	°C	serv	
<b>D15</b>	Maximum evaporator fan stop after defrost	0	120	<b>10</b>	min	serv	
<b>D16</b>	Defrost with evaporator probe fail	NO	YES	<b>YES</b>		serv	
<b>D17</b>	Defrost performed setpoint	0,0	15,0	<b>5,0</b>	°C	serv	Enabled only for timed defrost: if Tevaporator stay above "defrost performed setpoint" for "defrost performed" minutes, defrost is considered performed (timer counter is reset).
<b>D18</b>	Defrost performed duration	0	60	<b>15</b>	min	serv	



# HOSHIZAKI EUROPE

Item	<u>STEAMER</u>	Min	Max	Def	Dim.	Lev	Note
H01	Humidity control	NO	YES	<b>YES</b>		serv	
H02	Set temperature above which the boiler can be activated	-5,0	15,0	<b>5,0</b>	°C	serv	
H03	Use external SSR	NO	YES	<b>YES</b>		serv	
H04	Max allowed current in boiler (Imax2)	0,5	3.5/ 7.5	<b>6,5</b>	A	serv	
H05	Current in boiler to close the water inlet valve (Imax1)	0,5	3.5/ 7.5	<b>2,3</b>	A	serv	
H06	Current in boiler to open the water inlet valve (Imin)	0,5	3.5/ 7.5	<b>2,0</b>	A	serv	
H07	Max water inlet time	1	180	<b>60</b>	s	serv	
H08	Number of (H07) to elaps without resulting in (H05) being reached, before check water supply warning	1	5	<b>2</b>		serv	
H09	Number of (H07) to elaps without resulting in (H05) being reached, before setting boiler alarm	1	5	<b>5</b>		serv	
H10	Number of over flow detections to stop the boiler operation until a service reset	0	5	<b>5</b>		serv	
H11	Boiler check performed at the beginning of every proces including steam	NO	YES	<b>NO</b>		serv	
H12	Total drain time for boiler	1	120	<b>30</b>	s	serv	
H13	Drain time if H04 is reached	1	30	<b>1</b>	s	serv	
H14	Total drain of boiler (H12) is performed atleast every X day	0	8	<b>3</b>		serv	
H15	Number of tank load to perform a total drain (at the end of a recipe execution)	1	10	<b>5</b>		serv	
H16	Steam production ON -> OFF differential	0	10	<b>0</b>	%	serv	
H17	Steam production OFF -> ON differential	0	10	<b>2</b>	%	serv	
H18	Delay for water inlet	0	60	<b>5</b>	s	serv	



# HOSHIZAKI EUROPE

Item	SYSTEM	Min	Max	Def	Dim.	Lev	Note
S01	Plateau time -THAW-	0	100	25	%	user	
S02	Plateau time -PROVE-	0	100	25	%	user	
S03	Starting point acquisition time	10	180	60	s	serv	for slope calculation
S04	Frame heaters setpoint	-30,0	30,0	-5,0	°C	serv	
S05	Frame heaters differential	0,0	10,0	5,0	°K	serv	
S06	Door switch	NONE, NO, NC		NO		operator	No door switch; Normally Open; Normally Closed
S07	Door open shutdown delay	1	60	1	min	serv	After this time the compressor, heater and boiler are cut off
S08	Door open timeout	0	180	45	min	serv	After this time the controller resumes the regulation as per door closed (0 ==> disabled)
S09	Maximum time lights ON	1	30	5	min	serv	
S10	Daylight saving time	NO, YES, AUTO		AUTO		user	YES = manual, AUTO = europe
S11	Power Fail max duration	0	60	5	min	serv	0 => disabled
S12	Buzzer sounds at recipe completion	0	600	20	s	serv	0 => buzzer doesn't sound
S13	Modbus address	1	250	1			
S14	Performance test setpoint	-25,0	50,0	-18,0	°C		
S15	Performance test duration	1	60	30	min		
S16	Component test duration	1	300	30	s		
S17	Component test pause	1	300	5	s		
S18	Boiler test: current setpoint	0,5	3,5	2,0	A		
S19	Boiler test: overflow timeout	1	10	5	min		
S20	Level II password	0	9999	2222	min		
Item	ALARM	Min	Max	Def	Dim.	Lev	Note
A01	Low temperature alarm differential - STORAGE, RETARD, plateau time THAW, plateau time PROVE-	-20,0	0,0	-10,0	°K	serv	0 => low temp. Alarm disabled
A02	High temperature alarm differential - STORAGE, RETARD, plateau time THAW, plateau time PROVE-	0,0	20,0	10,0	°K	serv	0 => high temp. Alarm disabled
A03	Delay before alarm temperature warning	1	240	120	min	serv	
A04	Condensation temperature alarm set	0,0	100,0	65,0	°C	serv	Tcondenser1 >= S14 ==> high condenser temperature alarm set
A05	Condensation temperature alarm reset	0,0	100,0	40,0	°C	serv	Tcondenser1 <= S15 ==> high condenser temperature alarm reset
A06	Operation in case of high condenser alarm	NON, ALARM, STOP		STOP		serv	Compressor OFF, condenser fan ON
A07	Max consecutive high condenser temp alarms before setting an alarm	0	10	5		serv	only active if S16 = STOP; 0 = disabled



Item	INPUT	Min	Max	Def	Dim.	Lev	Note
I01	Adjusting room sensor input	-5,0	5,0	0,0	°K	serv	
I02	Adjusting evaporator sensor input	-5,0	5,0	0,0	°K	serv	
I03	Adjusting condenser 1 sensor input	-5,0	5,0	0,0	°K	serv	
I04	Adjusting Humidity sensor input	-5	5	0	%	serv	
Item	<u>NETWORK</u>	Min	Max	Def	Dim.	Lev	Note
N01	IPaddr - 1	1	255	192		user	
N02	IPaddr - 2	1	255	168		user	
N03	IPaddr - 3	1	255	0		user	
N04	IPaddr - 4	1	255	27		user	
N05	Subnet mask - 1	1	255	255		user	
N06	Subnet mask - 2	1	255	255		user	
N07	Subnet mask - 3	1	255	255		user	
N08	Subnet mask - 4	1	255	0		user	


## Defrosting Intervals (Storage)


The defrost intervals or time points are set in the "SET" menu, "D" (defrost) tab, see above parameter list.


Item	<u>DEFROST -STORAGE-</u>	Min	Max	Def	Dim.	Lev	Note
D03	Time interval among defrosts	0	24	6	hrs	user	
D04	Scheduled time for defrost 1	0	23:59 , --:--	--:--		user	
D05	Scheduled time for defrost 2	0	23:59 , --:--	--:--		user	
D06	Scheduled time for defrost 3	0	23:59 , --:--	--:--		user	
D07	Scheduled time for defrost 4	0	23:59 , --:--	--:--		user	



## PARAMETER LIST (SF 950+)

ALARM SETTINGS 	Parameter	Description	Setting Range	Default
	A1	Temperature limit for condenser sensor (Compressor stop, Cond.alarm)	0...99 °C	65
	A2	Reset temperature	0...99 °C	40
	A3	Interval for alarm repetition	5...30 min	5

DISPLAY (PRESENTATION) SETTINGS 	Parameter	Description	Setting Range	Default
	P1	Display of setpoint after defrosting	0 ... 99 min	30
	P2	Tolerance for setpoint	00 = +0/-0 01 = +1/-1, 02 = +2/-2 03 = +3/-3 04 = +4/-4 05 = +5/-5	3
	P3	Display refreshing	0 ... 99 sec	10
	P4	Temperature scale	Celsius = C Fahrenheit = F	C

COMPRESSOR (PRESENTATION) SETTINGS 	Parameter	Description	Setting Range	Default
	C1	Hysteresis	1=0/-1, 2=+1/-1, 3=+1/-2, 4=+2/-2, 5=+2/-3, 6=+3/-3	2
	C2	Upper temperature limit	+25 ... -35 °C	+10
	C3	Lower temperature limit	+25 ... -35 °C	-30
	C4	Pause time for compressor restart	0 ... 30 min	5
	C5	Condenser sensor configuration	0 = no sensor; 1 = 1 sensor (C); 2 = 2 sensors (C, D)	2
C6	Compressor stop at door opening	0....15 min	5	




# HOSHIZAKI EUROPE

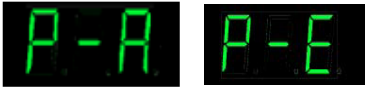


	Parameter	Description	Setting Range	Default
FAN (EVAPORATOR) SETTINGS  	F1	Evaporator fan start after defrosting	0 ... -10 °C	-1
	F2	Running- /pause time ratio for evaporator fan: Pause	0 ... 10 min	4
	F3	Running- /pause time ratio for evaporator fan: Running time	0 ... 99 sec	60

	Parameter	Description	Setting Range	Default
DEFROST SETTINGS  	D1	No. of defrosts / 24 hours	1...8	4
	D2	Defrost temperature limit	0 ...30 °C	12
	D3	("manual") initial defrosting	0 =On 1 =Off	0
	D4	Maximum defrost time	10 ... 60 min	30
	D5	Defrost mode	1 = automatic (depending on setting "d7") 2 = air 3 = electric (defrost heater)	3
	D6	Drip time	0....10 min	2
	D7	Temperature limit at automatic defrosting	at "d5" = 1: +2 ... +25°C	4
	D8	Evaporator monitoring, if exceeding, forced defrosting follows	-5 .. -50 °C	-40
	D9	Defrosting by termination of "PCL", "HCL", "SCL"	0 =On 1 =Off	1



# HOSHIZAKI EUROPE

	Parameter	Description	Setting Range
TEST RELAY SETTINGS 	TC	Test Compressor 1 + condenser fan	ON ("on") - OFF ("TC")
	TF	Test Evaporator fan	ON ("on") - OFF ("TF")
	Td	Test Defrost heater	ON ("on") - OFF ("Td")
	TL	Test Light	ON ("on") - OFF ("TL")
	tC2	Test Compressor 2	ON ("on") - OFF ("tC2")
	TdP	Test Display and Piezo buzzer, then display of software version at the secondary display.	ON (Start)

SENSOR DISPLAY		Sensor	Description
			
		P-A	Temperature sensor A (room sensor)
		P-b	Temperature sensor B (evaporator sensor)
		P-C	Temperature sensor C (condenser sensor 1)
		P-d	Temperature sensor D (condenser sensor 2)
		P-E	Temperature sensor E (extra sensor)
		Sensor defective or not connected	



## PARAMETER LIST (CO2)

Thermostat			Defrost		
r00	set point	-20	d01	0:none 1:electric 2:gas 3:brine 4:offcycle	1
r01	Differential	2	d02	defrost finish temp.	8
r02	max. set limit	12	d03	defrost interval	6
r03	min. set limit	-25	d04	max. defrost time	30
r05	temperature unit	C	d05	time staggering interval	0
r09	s4 air off evap adj.	0	d06	dripping time	3
r10	s3 air on evap adj.	0	d07	fan start delay	0
r11	s5 evaporator adj.	0	d08	fan start temperature	0
r12	main switch -1:service 0:off 1: on	1	d09	fan control 0:off 1:on 2:off-dripping 3:off-high temp	0
r13	night offset	0	d10	defrost finish method 0:time S5:s5 sensor S4:s4 sensor	S5
r14	thermostat mode	1	d16	pump delay	0
r15	thermostat s4	0	d18	max. thermostat runtime	0
r16	melt interval	0	d24	min. defrost time	0
r17	melt period	0	d27	rail heat during defrost 0:off, 1:on, 2:normal control	1
r19	s2 gas outlet adj.	0	d28	defrost temp. limit 2	6
r61	thermostat s4 at night	0	d40	display delay after defrost	30
r89	food type 0:none 1:vegetables 2:dairy 3:meat 4:frozen food 5:ice cream (r00,r02,r03,A13,A14)	0	<b>Injection control</b>		
r98	r4 frost protection	-60	n09	max. superheat limit	8
<b>Alarm</b>			n10	min. Superheat limit	4
A03	alarm delay a	60	n11	MOP temp.	15
A04	door open alarm	5	n13	AKV period time	6
A12	pulldown alarm	90	<b>Fan control</b>		
A13	high alarm	35	F04	fan stop high temp. s5 sensor	35
A14	low alarm	-35	F05	fan pulsing mode 0:no pulse 1:pulse - cutout 2:pulse - night cutout	0
A36	s4 alarm	0			



Defrost Schedule			Control		
<b>t00</b>	defrost schedule 0:no 1:yes	0	<b>P86</b>	max superheat liq contr	3
<b>t07</b>	time hours	X	<b>P87</b>	min superheat liq contr	1
<b>t08</b>	time minutes	X	<b>P88</b>	access code 1	0
<b>t45</b>	time date	X	<b>P89</b>	display keyboard lock 0:off 1:lock 2:network	0
<b>t46</b>	time month	X	<b>DO Config and Manual</b>		
<b>t47</b>	time year	X	<b>q09</b>	AO1 configuration	0
(x): will set by installer			<b>q28</b>	high tempreature priority 0:disabled 1:high 2:med 3:low	1
			<b>q29</b>	low temperature priority 0:disabled 1:high 2:med 3:low	1
<b>Miscellaneous</b>			<b>q30</b>	sensor errors priority 0:disabled 1:high 2:med 3:low	1
<b>o01</b>	delay output at power up	5	<b>q31</b>	DI alarms priority 0:disabled 1:high 2:med 3:low	2
<b>o03</b>	network address	0	<b>q32</b>	defrost priority 0:disabled 1:high 2:med 3:low	3
<b>o05</b>	access code 3	0	<b>q33</b>	miscellaneous priority 0:disabled 1:high 2:med 3:low	2
<b>o06</b>	temperature sensor type	PT	<b>q34</b>	injection priority 0:disabled 1:high 2:med 3:low	2
<b>o16</b>	max hold time	0	<b>q35</b>	control stopped priority 0:disabled 1:high 2:med 3:low	3
<b>o17</b>	s4 display %	0	<b>q36</b>	leak detection priority 0:disabled 1:high 2:med 3:low	2
<b>o20</b>	pe min range	X	<b>q39</b>	food temprature sensor 1:thermostat air, 2:alarm air 3:s3 air on evap, (r89)	2
<b>o21</b>	pe max range	X	<b>Service (just view)</b>		
<b>o30</b>	refrigerant type (co2)	28	<b>u00</b>	control state a	
<b>o37</b>	DI2 configuration	2	<b>u09</b>	s5 evaporator a	
<b>o46</b>	case cleaning mode 0:off 1:fans run 2:cleaning	0	<b>u11</b>	defrost time a	
<b>o61</b>	application mode	8	<b>u12</b>	s3 air on evap temperature a	
<b>o64</b>	access code 2	0	<b>u13</b>	night condition on/off	
<b>o67</b>	make new factory off/on	0	<b>u16</b>	s4 air off evap temperature a	
<b>o85</b>	rail heat control mode 0:on 1:day/night 2:dew point	0	<b>u17</b>	thermostat air temperature a	
<b>o88</b>	rail heat min on cycle %	30	<b>u18</b>	thermostat runtime a	
			<b>u20</b>	s2 gas outlet adj.	
			<b>u21</b>	superheat a	
<b>o89</b>	door restart inj. delay	30	<b>u22</b>	superheat reference a	
			<b>u23</b>	eev opening a	
			<b>u25</b>	pe evap pressure	
<b>o90</b>	fan at forced close 0:off 1:on 2:off-supress defrost 3:on-supress defrost	1	<b>u26</b>	te evap temperature	



<b>Service (just view)</b>		
<b>u37</b>	DI2 status on/off	
<b>u56</b>	display readout 1	
<b>u57</b>	alarm air temperature a	
<b>u59</b>	fan on/off	
<b>u60</b>	defrost a on/off	
<b>u61</b>	rail heat	
<b>u85</b>	railheat power	
<b>u90</b>	thermostat cutin temperature	
<b>u91</b>	thermostat cutout temperature	
<b>U45</b>	network status	
<b>U72</b>	food temperature	
<b>U73</b>	defrost sensor temperature	
<b>(x): will set by installer</b>		